



2013

# ANNUAL REPORT

**COMMONWEALTH OF MASSACHUSETTS**  
PUBLIC EMPLOYEE RETIREMENT ADMINISTRATION COMMISSION

# 2013 | Annual Report

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# COMMISSION MEMBERS | 2013

## CHAIRMAN



➤ **The Honorable Domenic J. F. Russo**



## VICE CHAIRMAN

➤ **The Honorable Suzanne M. Bump**  
Auditor of the Commonwealth

# COMMISSION MEMBERS | 2013



➤ **Philip Y. Brown, Esq.**  
Investment Professional



➤ **John B. Langan**  
Deputy Director, Office  
of Employee Relations



➤ **James M. Machado**  
Sergeant, Fall River Police Department



➤ **Donald R. Marquis**  
Former Town Manager, Arlington



➤ **Robert B. McCarthy**  
President Emeritus of the Professional  
Fire Fighters of Massachusetts



# IN MEMORY OF | DOMENIC J. F. RUSSO



During its existence, the Public Employee Retirement Administration Commission (PERAC) has published an Annual Report each year. Those Reports have been introduced by a Chairman's letter. This year we are setting aside that tradition and introducing this Report with a tribute to **Domenic J. F. Russo**, PERAC's Chairman, whose passing in May has left us all saddened.

To everyone he met, Judge Russo had a kind word and a broad smile. He brought to his role as PERAC Chairman a lifetime of knowledge gleaned from being an attorney, court clerk, naval commander and judge. But most importantly the Judge reached into an inexhaustible bank of experience as husband, father, mentor and friend. Over his years leading PERAC it was this experience that enabled him to counsel and inspire, to cajole and to praise, to be compassionate and to be firm.

*As Chairman, Judge Russo always made sure that the interests of the long term public employee, whether a firefighter, police officer, teacher or clerical worker, were paramount in the Commission's deliberations.*

Judge Russo often arrived early for Commission meetings and when he did so his first act was to visit with each PERAC staff member to offer a kind word of thanks and encouragement. Over the years, that personal touch made a vital contribution to the Commission's efforts by reminding us that our work, though often overlooked by outsiders, was appreciated by the one man who counted most.

As Chairman, Judge Russo always made sure that the interests of the long term public employee, whether a firefighter, police officer, teacher or clerical worker, were paramount in the Commission's deliberations. He stressed that the pension system was their system and it was our task to protect that system and ensure that it served these members and their beneficiaries. In representing those interests the Judge was open, fair and forthright, willing to listen and willing to act.

The Russo family is understandably devastated by this loss and their pain is not something that the rest of us can truly share, but perhaps the knowledge of how deeply their husband, father and grandfather touched the lives of those at PERAC will provide some small solace. If we are fortunate over the course of our lives we meet people who leave us better for having met them. It can be safely said of Dom Russo that he left all those he met better than they were before he met them.



## **PERAC** | MISSION STATEMENT

The Public Employee Retirement Administration Commission (PERAC) was created for and is dedicated to the oversight, guidance, monitoring, and regulation of the Massachusetts Public Pension Systems. The professional, prudent, and efficient administration of these systems is the public trust of PERAC and each of the 105 public pension systems for the mutual benefit of the public employees, public employers, and citizens of Massachusetts. The stewardship of the Trust Funds for the sole purpose of providing the benefits guaranteed to the public employees qualifying under the plans is the fulfillment of the obligation of the people of the Commonwealth to those who have dedicated their professional careers to the service of the people of the Commonwealth.



# LETTER FROM THE | VICE CHAIRMAN

Let me express the deep sense of loss that all at PERAC feel as a result of the passing of our Chairman Judge Russo. His leadership has been instrumental not only in the achievements outlined below but in the success of the Commission over the last decade. Judge Russo, through a lifetime of dedicated public service, contributed to the Commonwealth in many areas. We at PERAC are proud to say that we share in his accomplishments on behalf of public employees, retirees and the public in the vital area of retirement.

And so it is with mixed feelings that the Commission and its staff release this 2013 Annual Report. This year's Report reflects the status of the Massachusetts public pension systems as we emerge from the effects of the 2008 market collapse. Most systems have now recognized the investment losses stemming from that disaster and are now back on the path toward full funding. Retirement boards have implemented the dramatic changes in the law governing public pensions in the Commonwealth adopted in the last decade. Due to their aggressive approach Massachusetts stands out as a jurisdiction that recognized the need for change and addressed that need. Having taken these actions and weathered the storm of 2008 Massachusetts' public pension funds are prepared to provide adequate benefits to members and beneficiaries in a manner that is sensitive to the fiscal challenges confronting policy makers and taxpayers.

It is noteworthy that several of the major revisions in our law, particularly those related to Annual Statements of Financial Interest and Board Member Education, are no longer controversial. The Commission has made a conscientious effort to administer these aspects of the law with sensitivity to the privacy of board members. Those efforts have paid off in near 100% compliance. However, the true source of this success has been the willingness of individual board members to cooperate and to recognize these initiatives as an attempt to improve the retirement system.

*The balanced approach of shared sacrifice rather than an unfair shifting of burdens to public employees and their beneficiaries has enabled our pension system to navigate through difficult times.*

Unfortunately, prophets of doom continue to draw the attention of the media and through that lens the public has received a distorted view of the benefits available to public employees, the operation of the retirement systems, and the fiscal impact of pension payments. One aspect of this circumstance has been the empowerment of various so-called "think tanks" and the publishing of "studies" that simply confirm erroneous preconceived notions. These entities range from one end of the ideological spectrum to the other and seem to have in common the distortion of facts, the confusion of health care and pensions and a general disregard for alternative opinions. One of their most egregious distortions is the inability or perhaps unwillingness to distinguish between jurisdictions that truly have avoided addressing pension issues and other jurisdictions who have taken action. Massachusetts has acted over several decades to meet the challenges involved in providing retirement benefits to members and beneficiaries and in funding those benefits responsibly yet the broad brush paints us with the failings of Illinois, California and Detroit.

Since the publication of our last Annual Report, Commissioner Greg Mennis, who served as the investment appointee of the Governor, and Alan Macdonald who also served as a designee of the Governor, have left the Commission. During his tenure Commissioner Mennis was a voice for fiscal prudence and worked with Actuary Jim Lamenzo in the analysis of various financial matters. His efforts assisted the Commission in meeting the challenges arising from the 2008 investment collapse. Commissioner Macdonald brought years of experience both in and out of government to the Commission. His endeavors in the corporate governance area are reflected in the enhanced education of board members, the expanded vendor disclosures and the procurement rules now in place. On behalf of the people of the

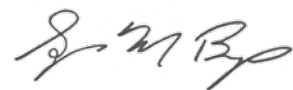
Commonwealth we thank Greg and Alan and wish them well in their future endeavors.

Attorney Phil Brown and John Langan have assumed positions on the Commission in the wake of these developments. Phil is familiar with the Massachusetts pension world as a result of his representation of the Middlesex Retirement Board. His perspective as a practicing attorney and his commitment to assuring that best practices are employed in the management of the pension funds have already made a substantial contribution to the Commission. John, Deputy Director of the Office of Employee Relations, has brought to bear his extensive experience in labor relations to issues pertaining to benefits and employee rights. He too, in a short period, has made a substantial contribution to the Commission's deliberations.

The balanced approach of shared sacrifice rather than an unfair shifting of burdens to public employees and their beneficiaries has enabled our pension system to navigate through difficult times. Any objective observer would conclude that we have confounded the naysayers and stand ready to move forward with a fiscally sound pension program that meets the retirement needs of members and beneficiaries.

As always, the Commission and staff will use our best efforts to assure that we maintain and build on this progress.

Sincerely,



Suzanne M. Bump  
Vice Chairman



# LETTER FROM THE | EXECUTIVE DIRECTOR



The Vice-Chair in her letter has expressed the deep sadness that all here at PERAC feel as a result of the loss of our Chairman Judge Russo. His leadership, guidance and most importantly friendship has improved not only the service the Commission provides to the people of Massachusetts but also had a lasting effect on all of us granted the privilege of working with him.

It is with a sense of gratitude for that privilege that the Commission and its staff releases this Annual Report on the Massachusetts Public Retirement Systems for 2013 a year which marked a turning point for public pension systems in Massachusetts as the investment losses suffered in 2008 have now been generally recognized and pension reforms fully implemented.

We are pleased that not only have systems weathered that storm, but most have acted to reduce return assumptions and adopt more conservative mortality assumptions, thereby enhancing preparedness for future uncertainty. In addition, it appears that the lengthy process of pension reform, which began nearly four decades ago, will slow down in the years ahead enabling the impact of major benefit revisions and corporate governance initiatives to have their intended effect.

As we have observed in the past, the willingness of retirement board members to greet major change with equanimity and cooperation puts to rest concerns about procurement practices, educational standards, and transparency that have contributed to the clamor for the destruction of Massachusetts' public pension funds and the repeal of benefits available to public employees in the Commonwealth.

## PORTFOLIO VALUATION

Most investment managers charge a fee based on a percentage of the value of portfolio assets (for example a portfolio valued at \$1 million with a management fee of 1% would generate a fee of \$10,000). In the more traditional asset classes the valuation of the portfolio is clear-cut as the

holdings are publicly traded and their values are set by the market. However holdings in some asset classes are not publicly traded and as a result the manager establishes their value.

In determining the value of investments in venture capital, hedge funds and other alternative asset classes to be disclosed in financial statements partnerships often follow the American Institute of Certified Public Accountants Audit and Accounting Guide. Pursuant to that Guide all investments are to be carried at "fair value". Generally Accepted Accounting Principles (GAAP) defines "fair value" as the price that would be received in a market and sets forth a hierarchy of valuation techniques based on whether the inputs to be used are based on independent market sources (observable) or the general partners market assumptions (unobservable). Thus unlike market priced securities whose value is set forth in the newspaper each day the limited partner (retirement board) must rely on the general partner to value these types of investments.

In the event that a retirement board has allocated a relatively high percentage of its total assets to these classes the valuation of these holdings can lead to an overstatement of the rate of return of the entire portfolio.

## IMPORTANCE OF TRANSPARENCY

The importance of valuation information is clearly stated in a recent New York Times article by Edward Siedle, president of Benchmark Financial Services, and former investigator with the Security and Exchange Commission's Division of Investment Management:

*Nearly a quarter of all state and local public pension assets have disappeared—\$660 billion in state workers' retirement savings taken off the radar and swept into high-cost hedge, private equity, venture and real estate funds with little or no public oversight.*

*It appears that the lengthy process of pension reform, which began nearly four decades ago, will slow down in the years ahead enabling the impact of major benefit revisions to have their intended effect.*

*The profound lack of transparency related to these risky so-called alternative investments provides money managers ample opportunities to charge outlandish fees, pay politically connected middlemen (aka 'placement agents'), carry out transactions on behalf of pension investors on unfavorable terms, or even steal assets outright.*

*Secret alternative investments at public pensions are likely to cost public workers and taxpayers billions over the next few years.*

*Worse still, state pension boards have betrayed their fiduciary duties by entering into expansive agreements with Wall Street to keep the very details of their abuse of pension assets secret — including withholding information regarding grave potential violations of law.*

*Kickbacks, bribery, self-dealing, fraud, tax evasion and outright theft have been protected as confidential 'trade secrets' or 'proprietary business information' exempt from disclosure to the public under various state freedom of information laws.*

*Not surprising, the parties complicit in this secrecy strategy neglected to tell workers and other stakeholders about it. The policy itself was crafted and set in place in secrecy.*

*Absent reform, corruption related to secret alternative investments at public pensions is likely to cost public workers and taxpayers billions over the next few years. At stake is nothing less than the fiscal viability of state and local governments across the country, as well as government employees' retirement security.*

*The need for regulatory intervention by the Securities and Exchange Commission cannot be overstated. At countless public pensions around the nation, in states such as California, New Jersey, Illinois, Kentucky, Florida, South Carolina and Utah, public scrutiny of alternative investments has been stymied.*

*In the past year, first in Rhode Island and last month in North Carolina, state workers have investigated and identified apparent violations of law involving approximately \$100 billion in public pensions and have called on the S.E.C. to take action. Whether the S.E.C. will ignore this national crisis remains to be seen.*

*Absent federal intervention, state-by-state challenges to public pension secrecy schemes crafted by Wall Street will be required. It's time to put the public back into public pensions.*

## STAFF CHANGES

Staff changes took place during the year as PERAC Deputy Director Frank Valeri retired after an illustrious career of state service. Frank's leadership of the Audit, Disability and Return to Work Units of PERAC ensured that the Commission would conduct those responsibilities in a professional and compassionate manner. He spearheaded efforts to relieve elderly and infirm disability retirees of the need to file annual income statements, oversaw an increase in the use of technology in these efforts and implemented a number of necessary internal changes to the oversight of the audit process. Perhaps most importantly, in dealing with those he came in contact with, whether the Governor or a confused retiree filing his income statement, Frank represented the Commission with impeccable courtesy and goodwill.

In the wake of Frank's departure the Commission implemented a staffing reorganization. General Counsel John Parsons assumed the position of Deputy Director and General Counsel. John continues to provide general supervision for the Legal Unit as General Counsel but has added duties in overseeing the Disability, Audit and Section 91A/Fraud Units.

Deputy General Counsel Judith Corrigan has assumed the position of Deputy General Counsel and Managing Attorney. In that capacity Judith is responsible for direct day-to-day management of the Legal Unit as well as broader legal matters.

Rounding out the reorganization was the assignment of Derek Moitoso to Compliance Counsel where he has brought his legal knowledge and skills to bear on various compliance issues.

These personnel actions have enabled us to maintain operational continuity while reorganizing our overall approach to these functions.



## EMERGING ISSUES FORUM

In September 2013, PERAC held its ninth Emerging Issues Forum at the College of the Holy Cross. Over two hundred and fifty people participated as board members attending received three educational credits. Opening remarks included a rebuttal to assertions by the Pioneer Institute regarding public pensions in Massachusetts. Misrepresentations relative to board stipends, staffing levels and transparency were highlighted. The actuarial panel, moderated by PERAC Actuary Jim Lamenzo, focused on the investment return assumption dilemma. Across the country pension funds and actuaries are grappling with the need to employ accurate assumptions while remaining cognizant of the impact of those assumptions. Bill Woollacott and Rodger Metzger of Hooker & Holcombe presented a comparison between Massachusetts and Connecticut plans by reviewing investment return assumptions and funded ratios.

All agreed that other assumptions also play a role in actuarial valuations and some, such as the salary assumption, mitigate fluctuations in the investment return assumption. PERAC Compliance Counsel Derek Moitoso chaired a session on Section 23B and a comparison with ERISA. Jeffrey Collins, Foley Hoag partner and Bill Jewitt, Ropes & Gray partner, reviewed the vendor disclosure and procurement requirements of Section 23B and suggested the best methods for board compliance.

The highlight of the event was clearly the keynote address by Senator "Mo" Cowan. As an interim appointee to fill the vacancy created by Senator John Kerry's assuming the position of Secretary of State, Senator Cowan brought a unique perspective to Washington. He shared that experience and his observations with the attendees stressing that the reality of what transpires is not always reflected in the media reports and the need to work together in meeting the challenges ahead. The Senator also discussed his compelling personal story that provides a source of inspiration and also a primer on the need to assure that hard work and personal perseverance are complimented by a caring society.

The Forum concluded with a presentation by Elizabeth Page, District Director of the Financial Industry Regulatory Authority (FINRA). Ms. Page gave an overview of FINRA's role as a regulator. She emphasized the organizations function in the area of enforcement, registration and investor education. A centerpiece of her address was a practical review of the robust tools available through FINRA for education as well as for assessing brokers and other investment service providers.

Once again an excellent program informed and educated retirement board members and administrators, actuaries, attorneys, investment professionals and other attendees.

## CORPORATE GOVERNANCE

The Commission has recently set forth a requirement for investment entities doing business with retirement boards. A retirement board that seeks to invest funds with an entity that is not registered with the Securities and Exchange Commission ("SEC") or, if applicable, the Massachusetts Office of the Secretary of State ("SOS") will not receive an Acknowledgement Letter from the Commission and therefore may not make such an investment as the Commission has determined that it is in the best interest of the retirement system to withhold the Acknowledgement in circumstances in which a retirement board seeks to invest with a non-registered entity.

Another Corporate Governance initiative dealt with the posting of minutes. While minutes of PERAC meetings have always been available to any member of the interested public upon request, we have now made that information accessible online. This innovation adds to the list of transparency initiatives launched by PERAC over the past several years.

Policy makers, the retirement community, advocacy groups and the general public will now be able to review the official deliberations of the Commission with the click of a few buttons on PERAC's website.

We encourage all Massachusetts retirement boards that have not yet done so to post their minutes on their websites. This will enhance the transparency of their boards' deliberations and provide important information about the deliberations

*Policy makers, the retirement community, advocacy groups  
and the general public will now be able to  
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of the board to employees, retirees, political and administrative leaders and the general public. As PERAC moves forward with its web redesign we will explore the possibility of posting retirement board minutes on our site as well.

## WEB SITE

The Commission has embarked on the process of revamping our web site. A major first step in that effort was a survey of existing users to assess areas that need improvement. Over sixty per cent of Board Administrators provided feedback. In general, comments were positive as respondents noted that they were able to find information they needed. Some suggested a better search feature and changes in the site's layout to make information easier to find. PERAC Memos, Forms & Publications and Board Profile pages were listed as the most visited while nearly half of the users indicate they are on the site about once a week.

We are now working with the Mass.gov team at the Massachusetts Information Technology Division to modify and revise the PERAC Web Site and hope to roll out a new version at the end of the year.

## LEGAL ISSUES

PERAC has prevailed at the Superior Court level in the case of *PERAC v. Bettencourt*. The Court agreed with the Commission that Section 15(4) pension forfeiture may not be halted by the Eight Amendment of the US Constitution. Peabody Police Lieutenant Edward Bettencourt had been convicted of criminal offenses pertaining to his use of personal information of other police officers while on duty to access Civil Service Examination scores on the Commonwealth's Human Resources Division Website. Bettencourt challenged PERAC's instruction to the retirement board that his retirement rights were forfeit and that he was only entitled to a return of his accumulated deductions without interest. He based the

challenge on an assertion that the offenses were not related to his position and that the forfeiture of his pension would constitute an excessive fine, prohibited by the Eight Amendment. The Appeals Court rejected his job relatedness argument but returned the excessive fines issue to the District Court. The District Court found that the forfeiture is an excessive fine. The Superior Court has now overturned the District Court decision. We anticipate further proceedings in this matter.

## POST-RETIREMENT EARNINGS

In addition to limits on the earnings of disabled members the law restricts the ability of retired members to receive earnings from a public employer. Post-Retirement limitations are governed by G.L. c. 32 § 91(b), which states that public retirees who return to public employment with any governmental entity in Massachusetts cannot exceed service in excess of 960 hours in a calendar year, nor can any compensation in a calendar year from a city, town, the Commonwealth, or any of its subdivisions, when added to his/her retirement allowance exceed the salary currently being paid for the position from which he/she retired. If a retiree has been retired for more than 12 months such retiree may earn an additional \$15,000 in each calendar year following such 12-month period.

In an effort to assist retirement boards and local officials in the oversight of post-retirement earnings for employees who are retired from a public retirement system in the Commonwealth, PERAC developed and disseminated the "Post-Retirement Earnings Worksheet" and "Commonly Asked Post Retirement Earnings Q & A" documents (see PERAC Memo #30.2013). It is hoped that the application of these procedures will facilitate the enforcement of this statute.

## EXPERIENCE STUDY

Recently the Commission issued its third Experience Study of the State Retirement System. This report presented the results of our experience analysis for members of the State Retirement System (SRS) over the six-year period from January 1, 2006 through December 31, 2011 and is based on annual data provided to us by the SRS each year from January 1, 2006 through January 1, 2012.

The investment return assumption, which is not part of the experience analysis, has been reduced from 8.25% to 8.0% effective with the January 1, 2013 actuarial valuation. In determining the effect of the revised assumptions, we used the 8.0% investment return assumption.

We reviewed the gains and losses on plan liabilities (excluding asset gains and losses) from 2006 through 2011. PERAC performed State valuations for each year in this period. Our review of the gains and losses over this period shows that, overall, the actuarial assumptions were generally reasonable but slightly conservative. There were actuarial gains (experience better than anticipated) in 5 of the 6 years ranging from \$33 million to \$346 million. There was an actuarial loss in 2006 of \$163 million. Over the entire 6-year period, the assumptions generated a net cumulative gain of \$694 million, or an average gain of \$116 million per year. This amount is quite small considering the total actuarial accrued liability of approximately \$27.8 billion as of January 1, 2012 (average gain of less than ½ of 1% of actuarial liability each year).

As part of this experience study, we performed member reconciliations of actual retirements, terminations, and disabilities over the 6-year period. We analyzed these results using not only valuation data from each year, but also listings generated by the PERAC disability unit.

The annual funding schedule appropriation (the total plan cost) reflects two sources of plan costs and liabilities. The first is the amortization of the unfunded actuarial liability (UAL). In addition to the amortization of the UAL, the annual appropriation also reflects the normal cost (or current cost), which represents the value of benefits accruing during the coming year. The measure of the impact on the total plan cost of any change in assumptions is the impact of that change on these two components.

Overall, the revised assumptions decrease the total plan cost. This is consistent with the cumulative actuarial gains over the 6-year period.

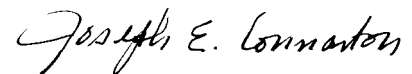
These results for the SRS reflect only one component of the Total Commonwealth Obligation. The other components are the Massachusetts Teachers' Retirement System, Boston teachers, and reimbursements to local systems to reflect COLAs granted from 1982 through 1996. The experience study of the Massachusetts Teachers' Retirement System is in progress and will be released later this year.

## CONCLUSION

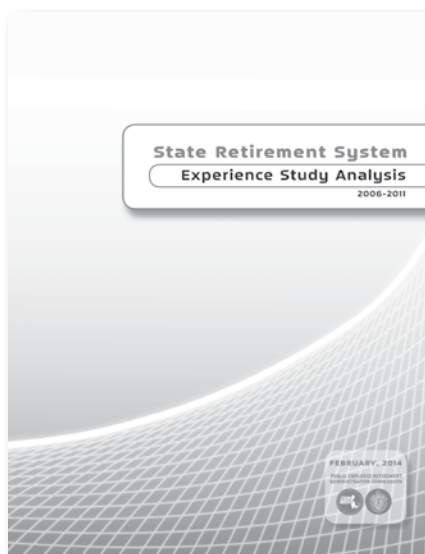
In our message last year it was suggested that all those involved in the Massachusetts public pension community take a deep breath and assess recent history. Having done so, we can state unequivocally that the challenges rising from the devastating collapse of the capital markets, the ensuing slowdown of the economy and recent statutory changes have been met. Everyone has worked together to keep our system intact while overcoming the fiscal strain caused by the market failure. As we emerge from that disaster, retirement boards can take great pride in having balanced the need to ensure that liabilities are addressed with the fact that state and local resources must meet a variety of needs. Responsible funding schedules are driving adequate appropriations to ultimately fully fund the system and investment returns are reverting to the pre-2008 trend with corresponding benefits to the bottom line. Professional management of assets has led to long-range returns supporting the conclusion that retirement boards have responsibly managed system assets.

There are many who keep up the drumbeat of negativism about our pension funds and those served by these funds. Let our record of fiscal prudence, compassionate administration and steady stewardship be our response.

Sincerely,



Joseph E. Connarton  
Executive Director





# MASSACHUSETTS CONTRIBUTORY | RETIREMENT BOARD PROFILES

## INTRODUCTION

The Board Profile section of the PERAC Annual Report provides a detailed assessment of some of the important indicators relative to the financial health of the retirement systems. The information provided in this report can enable board members to provide factual comment and advice to policymakers as various proposals relative to the retirement law are assessed. Through this and other studies, the Commission seeks to provide objective, comprehensive, and accurate data for use by all interested parties.

## A WORD ON PORTFOLIO VALUATIONS

This Report details the investment returns for the retirement systems in 2013. In assessing investment performance, PERAC relies on the retirement boards to submit accurate and complete information about investment activity. PERAC numbers may differ from those provided to a board by its consultant because PERAC measures all assets, including monies not committed to investment management. In addition, as outlined below, for certain asset classes, PERAC like consultants, custodians and others charged with measuring investment performance is constrained to use valuations that are determined by the investment manager or general partner.

During the last few years the Securities and Exchange Commission (SEC) has taken a more aggressive stance towards the valuation of portfolio holdings by venture capital partnerships and other alternative investment management entities. That attention has focused on how the general partners value the portfolio investments which may be direct investments in companies or, in the fund of funds situation, the partnerships to which assets have been committed.

There is no simple method of accurately valuing these holdings and the process is largely subjective. In one SEC initial public offering filing the Carlyle Group stated, "Valuation methodologies for certain assets in our funds can involve subjective judgments and the fair value of assets established pursuant to such methodologies may be incorrect, which could result in the misstatement of fund performance."

In determining the value of investments to be disclosed in financial statements in venture capital, hedge funds and other alternative asset classes, partnerships often follow the American Institute of Certified Public Accountants Audit and Accounting Guide. Pursuant to that Guide all investments are to be carried at "fair value". Generally Accepted Accounting Principles (GAAP) defines "fair value" as the price that would be received in a market and sets forth a hierarchy of valuation techniques based on whether the inputs to be used are based on independent market sources (observable) or the general partners' market assumptions (unobservable). Thus, unlike market priced securities whose value is set forth in the newspaper each day, the limited partner (retirement board) must rely on the general partner to value these types of investments.

*"Fair Value" is somewhat of a misleading term as it implies a more scientific process than is in fact used to value most holdings and can appear to some limited partners as a variation of market value. It most definitely is not.*

"Fair Value" is somewhat of a misleading term as it implies a more scientific process than is in fact used to value most holdings and can appear to some limited partners as a variation of market value. It most definitely is not. The process outlined below as "Level 3" has been developed precisely because through much of the partnership's existence there is no market price and no independent market pricing mechanism exists. This is why auditors use phrases such as "For investments within Level 3 the methods described may produce a fair value measurement that may not be indicative of the ultimate realizable value" to describe what credence to give to such valuations.

The three levels of the fair value hierarchy are as follows:

**Level 1** – Inputs that reflect unadjusted quoted prices in active markets for identical assets or liabilities that the Fund has the ability to access at the measurement date;

**Level 2** – Inputs other than quoted prices that are observable for the asset or liability either directly or indirectly, including inputs in markets that are not considered to be active;

**Level 3** – Inputs that are unobservable.

Auditors stress that "...estimated values may differ significantly from the values that would have been used had a readily available market for such investments existed or had such investments been liquidated, and these differences could be material to the financial statements." As a result audits of a fund that employs "Level 3" valuations may include the caveat that a material issue with respect to the financial statements exists because the ultimate realized value of the holdings may differ substantially from the value carried in the financial statements.

Retirement boards and others should be particularly leery of a financial statement in which all the holdings are valued through "Level 3". These concerns are amplified when the resulting valuation indicates a positive performance in most or all of the portfolio holdings.



Consequently performance measurement of these portfolios generally reflects these estimates as resources do not enable a full independent valuation of these holdings which, by their illiquid nature, do not possess the characteristics of more marketable instruments.

## PERFORMANCE IMPACT

This has major implications for the returns of retirement systems that have allocated a substantial portion of assets to assets that are valued in this manner. As noted it is impossible for PERAC, custodians, boards and consultants to conduct independent valuations of the portfolio companies that comprise these alternative investment portfolios. The greater allocation to these investments, the greater the likelihood that the overall return of the system will be impacted by the use of values determined in the manner outlined above.

## ACTUARIAL

As always, actuarial information details the fiscal condition of the systems, which can play a direct role in state and local budgets. The funded ratio indicates the extent to which assets cover system liabilities. When the system will pay off its unfunded liability and what type of funding schedule is being used are also noted. PERAC has consistently urged boards to conduct actuarial valuations in order to provide an up-to-date assessment of the fiscal condition of the system. The actuarial information is based on information received or available as of April 1, 2014.

The Funding Schedule item reflects the amortization schedule for the Unfunded Actuarial Liability (UAL). For example, 1.5% increasing with a year fully funded of 2030 means the UAL is being amortized on a 1.5% annually increasing basis to FY30.

A number of systems utilize phase-in schedules in which payments increase more rapidly over the first few years of the schedule than later in the schedule. We reflect those schedules using the ultimate amortization schedule and note there is a phase-in. For example, “4.0% Increasing Phase-in” with a year fully funded of 2035 could mean the total appropriation increases 8.0% per year for 4 years and then the remaining unfunded liability is amortized on a 4.0% annual increasing basis until FY35. Twenty-two systems currently use a phase-in approach and both the percentage increase and number of years before the amortization begins vary. Schedules described as “Total Increasing” mean the annual appropriation increases by the amount indicated, which may vary, for the entire schedule. Thirty systems have such a schedule. In total, about one half of systems utilize a phase-in and/or total increasing schedule.

PERAC approved 50 new funding schedules and processed 25 actuarial valuations in 2013. The valuations complemented the 26 valuations performed by private actuaries. The Actuarial Unit also completed the annual actuarial valuation of the Commonwealth’s pension liability. Throughout the year, PERAC responded to many legislative and gubernatorial requests for analysis of legislation and made presentations at several forums.

## MEDICAL PANELS/POST RETIREMENT EARNINGS

In addition to the information detailed in the Profiles, PERAC, as always, has been busy assisting the boards in other areas. In 2013, 668 medical panel requests were processed and 1501 comprehensive medical evaluations were conducted. This led to the approval of 585 disability applications and 64 accidental death claims. There have been 45 medical re-examinations of disability retirees.

Such medical evaluations and examination resulted in 3 members returning to work saving \$113,892.

PERAC is responsible for the post-retirement monitoring of disabled retirees. One aspect of that task is enforcing the earnings limits set forth in Chapter 32. In 2013, PERAC analyzed 15,599 earnings reports, 3,958 retirees reported earnings and 157 earned in excess of the statutory limits. An additional 59 retirees failed to comply with the reporting requirement. This resulted in the recovery of \$1,250,737 in excess earnings and \$1,770,132 for non-compliance. In addition 35 retirees waived their allowance saving \$546,942.

## AUDITS

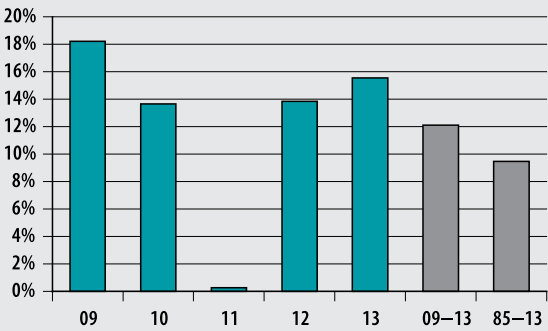
In 2013, PERAC conducted 33 audits of retirement systems. In addition, 12 follow-up audits were issued. In the last few years the Commission has awarded Certificates of Achievement to those systems found by our auditors to be operating in an exemplary fashion. In 2013 we issued 10 Certificates of Achievement. As always, PERAC audit staff conducted annual seminars on the preparation of the Annual Statement, which included training regarding issues arising from the most recent pension reforms and the Attorney General’s revised open meeting law regulations addressing remote participation.



COMPOSITE INVESTMENT PROFILE

- ▶ Commonwealth of Massachusetts
- ▶ Public Employee Retirement Systems and Pension Reserves Investment Trust

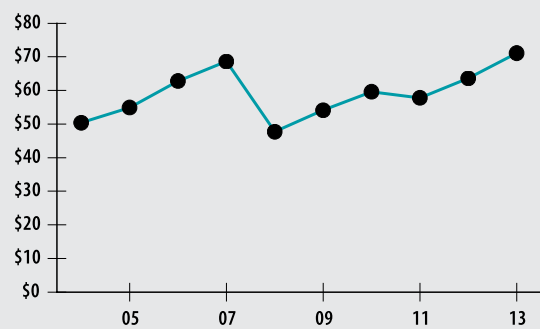
INVESTMENT RETURN (2009-2013, 5 YEAR AND 29 YEAR AVERAGES)



INVESTMENT

▶ 2013 Return	15.57%
▶ 2013 Market Value	\$71.1 B
▶ 2009-2013 (Annualized)	12.13%
▶ 1985-2013 (Annualized)	9.49%

ASSET GROWTH (2004-2013) (MARKET VALUE IN BILLIONS)



## Adams

Town Hall  
8 Park Street, 3rd Floor  
Adams, MA 01220  
Phone 413-743-5575  
Fax 413-743-2815

### Board Members

Bernard Pinonnault (Chairperson),  
Mary Beverly, David Clark, Allen Mendel,  
Patricia Wol

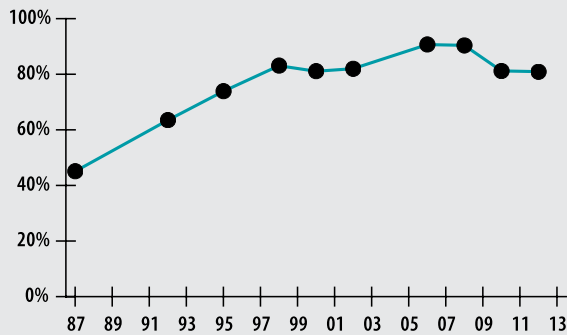
### Board Administrator

Cheryl J. Lillie

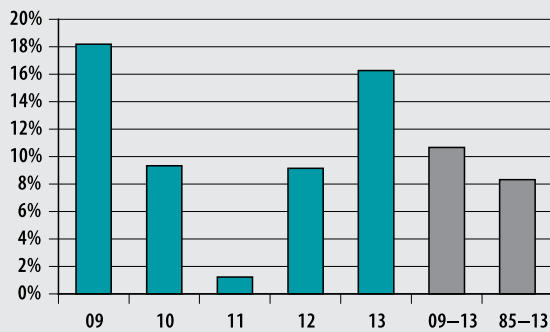
### Board Meeting

Fourth Monday of each month at 4:00 pm

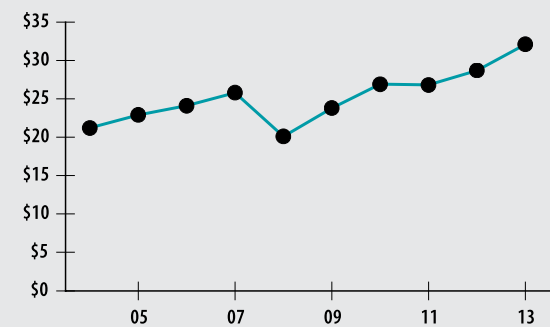
### FUNDED RATIO (1987-2013)



### INVESTMENT RETURN (2009-2013, 5 YEAR AND 29 YEAR AVERAGES)



### ASSET GROWTH (2004-2013) (MARKET VALUE IN MILLIONS)



### INVESTMENT RETURN HISTORY

**29 years 2013**  
8.33%

**28 years 2012**  
8.05%

**27 years 2011**  
8.01%

**10 years 2013**  
5.63%

**10 years 2012**  
5.39%

**10 years 2011**  
4.13%

**5 years 2013**  
10.68%

**5 years 2012**  
2.26%

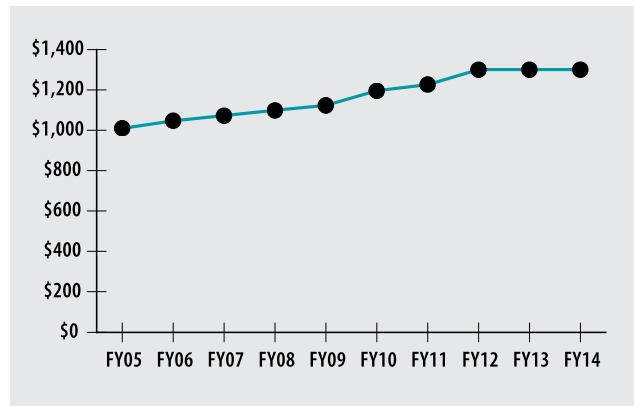
**5 years 2011**  
2.01%

## ACTUARIAL

▶ Funded Ratio	80.9%
▶ Date of Last Valuation	01/12
▶ Actuary	PERAC
▶ Assumed Rate of Return	7.50%
▶ Funding Schedule	1.5% Increasing
▶ Year Fully Funded	2030
▶ Unfunded Liability	\$6.8 M
▶ Total Pension Appropriation (Fiscal 2014)	\$1.3 M

	ACTIVE	RETIRED
▶ Number of Members	195	132
▶ Total Payroll/Benefit	\$6.1 M	\$1.6 M
▶ Average Salary/Benefit	\$31,100	\$12,300
▶ Average Age	49	73
▶ Average Service	13.0 years	NA

## 10-YEAR HISTORY OF APPROPRIATIONS (IN THOUSANDS)

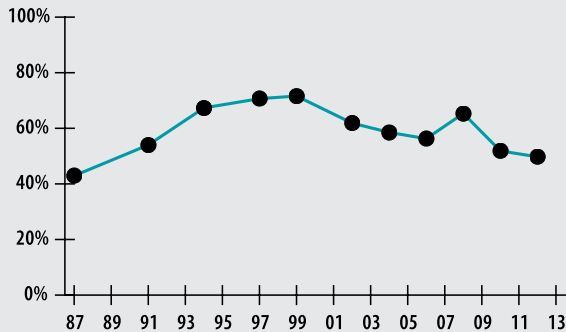


## EARNED INCOME OF DISABILITY RETIREES (2012)

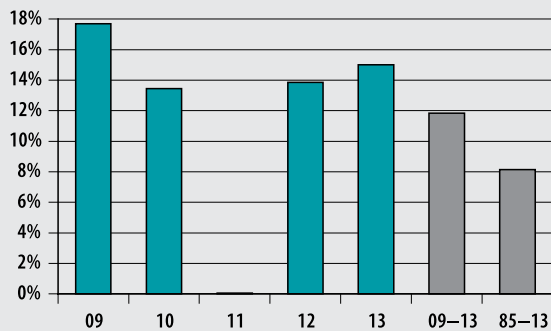
▶ Number of Disability Retirees	8
▶ Number Who Reported Earnings	3
▶ Number of Excess Earners	0
▶ Total Amount of Refund Due	\$0

▶ 2013 Return	16.27%
▶ 2013 Market Value	\$32.1 M
▶ 2009-2013 (Annualized)	10.68%
▶ 1985-2013 (Annualized)	8.33%

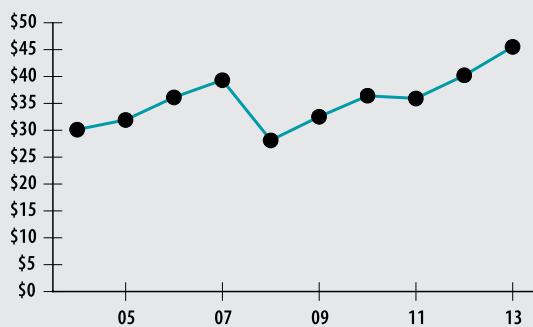
## FUNDED RATIO (1987-2013)



## INVESTMENT RETURN (2009-2013, 5 YEAR AND 29 YEAR AVERAGES)



## ASSET GROWTH (2004-2013) (MARKET VALUE IN MILLIONS)



## INVESTMENT RETURN HISTORY

**29 years 2013**  
8.15%

**28 years 2012**  
7.91%

**27 years 2011**  
7.70%

**10 years 2013**  
6.33%

**10 years 2012**  
6.72%

**10 years 2011**  
4.37%

**5 years 2013**  
11.84%

**5 years 2012**  
1.57%

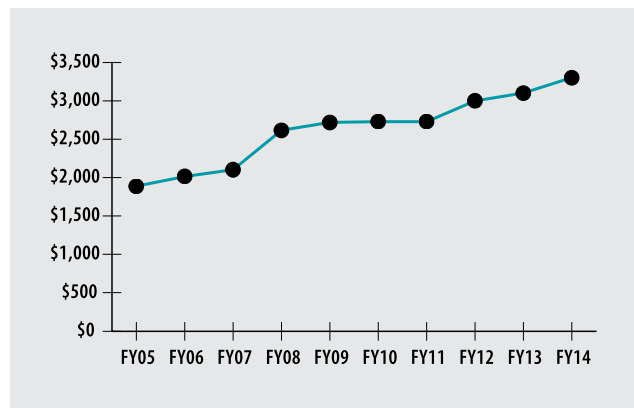
**5 years 2011**  
0.72%

## ACTUARIAL

▶ Funded Ratio	49.8%
▶ Date of Last Valuation	01/12
▶ Actuary	Sherman Actuarial Services, LLC
▶ Assumed Rate of Return	8.25%
▶ Funding Schedule	4.0% Increasing
▶ Year Fully Funded	2036
▶ Unfunded Liability	\$39.1 M
▶ Total Pension Appropriation (Fiscal 2014)	\$3.3 M

	ACTIVE	RETIRED
▶ Number of Members	256	223
▶ Total Payroll/Benefit	\$13.5 M	\$4.1 M
▶ Average Salary/Benefit	\$52,600	\$18,500
▶ Average Age	NA	72
▶ Average Service	NA	NA

## 10-YEAR HISTORY OF APPROPRIATIONS (IN THOUSANDS)



## EARNED INCOME OF DISABILITY RETIREES (2012)

▶ Number of Disability Retirees	17
▶ Number Who Reported Earnings	7
▶ Number of Excess Earners	0
▶ Total Amount of Refund Due	\$0

▶ 2013 Return	15.02%
▶ 2013 Market Value	\$45.5 M
▶ 2009-2013 (Annualized)	11.84%
▶ 1985-2013 (Annualized)	8.15%

## Andover

Town Offices  
36 Bartlet Street  
Andover, MA 01810  
Phone 978-623-8213  
Fax 978-623-8471

### Board Members

James A. Cuticchia (Chairperson),  
Elena M. Kothman, Theodora K. Moccia,  
Anthony K. Stankiewicz, Esq.

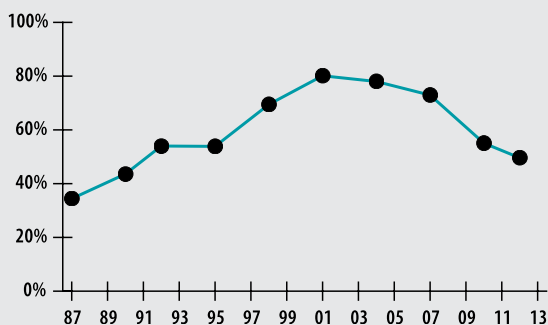
### Board Administrator

Elena M. Kothman

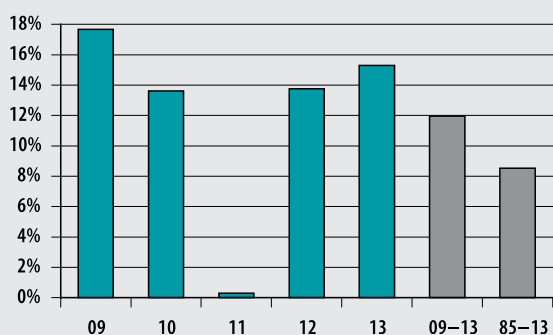
### Board Meeting

Day and date vary

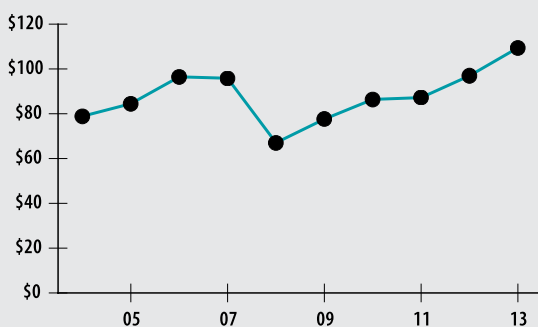
### FUNDED RATIO (1987-2013)



### INVESTMENT RETURN (2009-2013, 5 YEAR AND 29 YEAR AVERAGES)



### ASSET GROWTH (2004-2013) (MARKET VALUE IN MILLIONS)



### INVESTMENT RETURN HISTORY

**29 years 2013**  
8.54%

**28 years 2012**  
8.31%

**27 years 2011**  
8.11%

**10 years 2013**  
5.42%

**10 years 2012**  
5.35%

**10 years 2011**  
2.91%

**5 years 2013**  
11.96%

**5 years 2012**  
1.52%

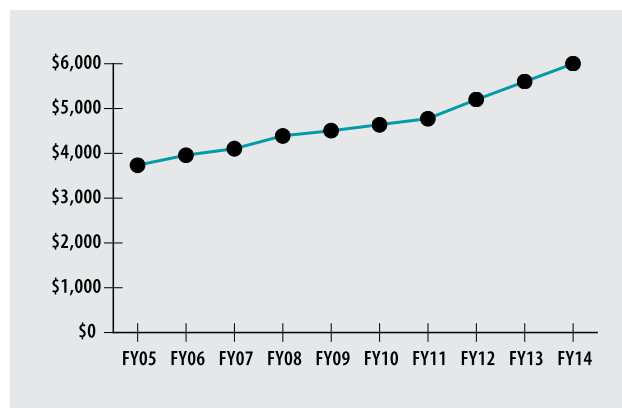
**5 years 2011**  
-0.07%

## ACTUARIAL

▶ Funded Ratio	49.7%
▶ Date of Last Valuation	01/12
▶ Actuary	The Segal Company
▶ Assumed Rate of Return	7.75%
▶ Funding Schedule	4.0% Increasing Phase-in
▶ Year Fully Funded	2040
▶ Unfunded Liability	\$96.8 M
▶ Total Pension Appropriation (Fiscal 2014)	\$6.0 M

	ACTIVE	RETIRED
▶ Number of Members	701	396
▶ Total Payroll/Benefit	\$34.4 M	\$9.9 M
▶ Average Salary/Benefit	\$49,100	\$25,000
▶ Average Age	49	NA
▶ Average Service	12.1 years	NA

## 10-YEAR HISTORY OF APPROPRIATIONS (IN THOUSANDS)

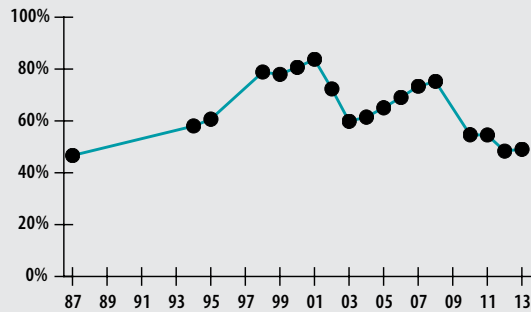


## EARNED INCOME OF DISABILITY RETIREES (2012)

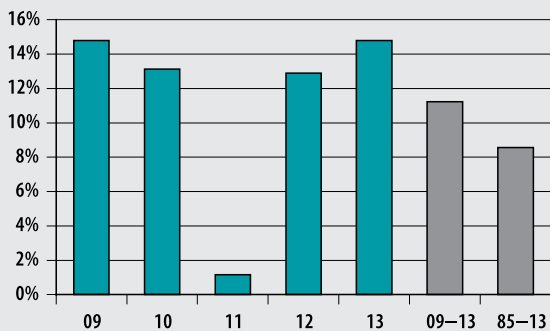
▶ Number of Disability Retirees	39
▶ Number Who Reported Earnings	10
▶ Number of Excess Earners	0
▶ Total Amount of Refund Due	\$0

▶ 2013 Return	15.31%
▶ 2013 Market Value	\$109.3 M
▶ 2009-2013 (Annualized)	11.96%
▶ 1985-2013 (Annualized)	8.54%

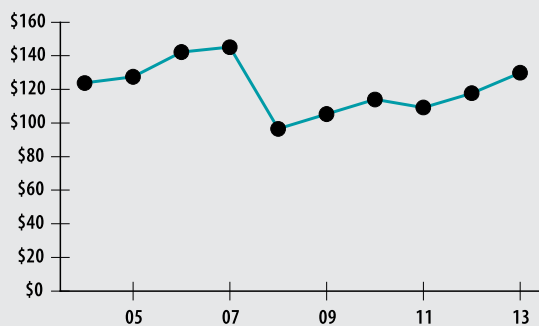
#### FUNDED RATIO (1987-2013)



#### INVESTMENT RETURN (2009-2013, 5 YEAR AND 29 YEAR AVERAGES)



#### ASSET GROWTH (2004-2013) (MARKET VALUE IN MILLIONS)



#### INVESTMENT RETURN HISTORY

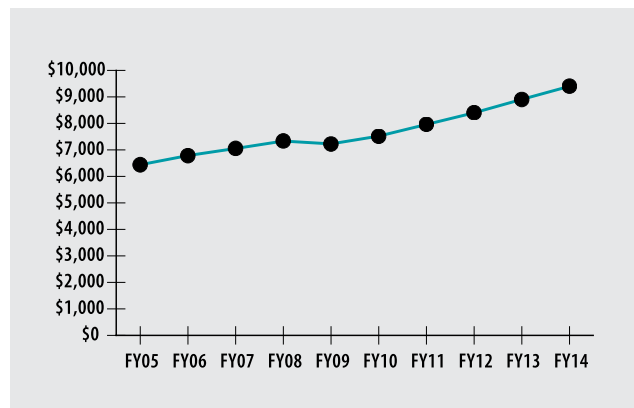
<b>29 years 2013</b> 8.57%	<b>28 years 2012</b> 8.35%	<b>27 years 2011</b> 8.19%
<b>10 years 2013</b> 5.22%	<b>10 years 2012</b> 6.19%	<b>10 years 2011</b> 3.50%
<b>5 years 2013</b> 11.23%	<b>5 years 2012</b> 0.47%	<b>5 years 2011</b> -1.02%

#### ACTUARIAL

▶ Funded Ratio	49.1%
▶ Date of Last Valuation	01/13
▶ Actuary	Stone Consulting
▶ Assumed Rate of Return	7.50%
▶ Funding Schedule	6.0% Total Increasing
▶ Year Fully Funded	2032
▶ Unfunded Liability	\$120.5 M
▶ Total Pension Appropriation (Fiscal 2014)	\$9.4 M

	ACTIVE	RETIRED
▶ Number of Members	676	634
▶ Total Payroll/Benefit	\$30.0 M	\$16.1 M
▶ Average Salary/Benefit	\$44,400	\$25,400
▶ Average Age	48	74
▶ Average Service	11.0 years	NA

#### 10-YEAR HISTORY OF APPROPRIATIONS (IN THOUSANDS)

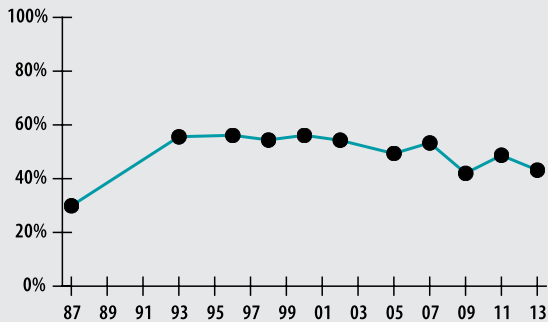


#### EARNED INCOME OF DISABILITY RETIREES (2012)

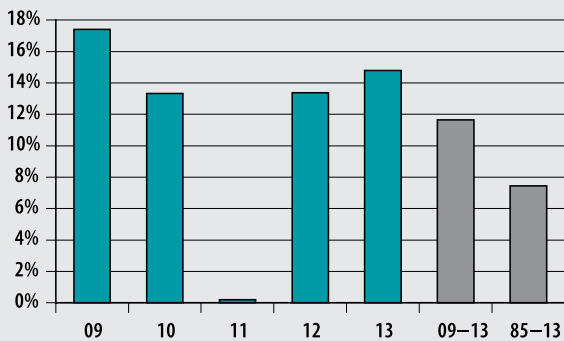
▶ Number of Disability Retirees	87
▶ Number Who Reported Earnings	16
▶ Number of Excess Earners	1
▶ Total Amount of Refund Due	\$1,783

▶ 2013 Return	14.79%
▶ 2013 Market Value	\$129.9 M
▶ 2009-2013 (Annualized)	11.23%
▶ 1985-2013 (Annualized)	8.57%

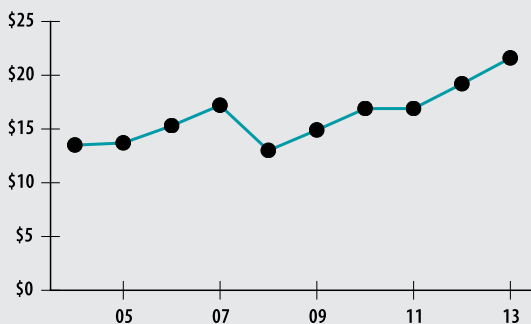
### FUNDED RATIO (1987-2013)



### INVESTMENT RETURN (2009-2013, 5 YEAR AND 29 YEAR AVERAGES)



### ASSET GROWTH (2004-2013) (MARKET VALUE IN MILLIONS)



### INVESTMENT RETURN HISTORY

**29 years 2013**  
7.45%

**28 years 2012**  
7.20%

**27 years 2011**  
6.98%

**10 years 2013**  
5.65%

**10 years 2012**  
5.48%

**10 years 2011**  
3.61%

**5 years 2013**  
11.66%

**5 years 2012**  
1.69%

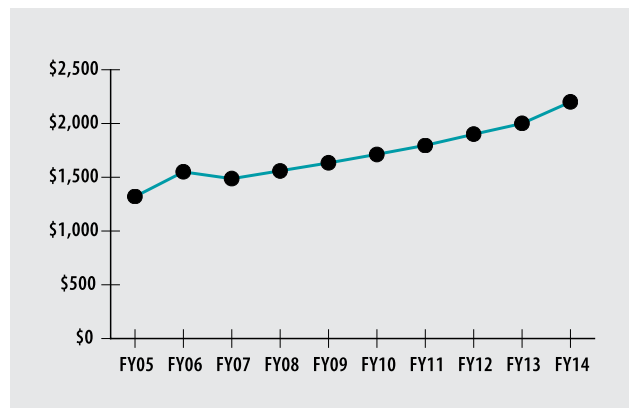
**5 years 2011**  
1.05%

### ACTUARIAL

▶ Funded Ratio	43.2%
▶ Date of Last Valuation	01/13
▶ Actuary	PERAC
▶ Assumed Rate of Return	7.75%
▶ Funding Schedule	6.0% Total Increasing
▶ Year Fully Funded	2033
▶ Unfunded Liability	\$26.2 M
▶ Total Pension Appropriation (Fiscal 2014)	\$2.2 M

	ACTIVE	RETIRED
▶ Number of Members	193	156
▶ Total Payroll/Benefit	\$7.3 M	\$2.4 M
▶ Average Salary/Benefit	\$37,800	\$15,600
▶ Average Age	49	75
▶ Average Service	14.0 years	NA

### 10-YEAR HISTORY OF APPROPRIATIONS (IN THOUSANDS)



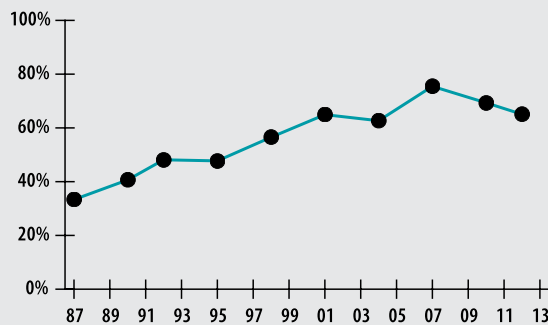
### EARNED INCOME OF DISABILITY RETIREES (2012)

▶ Number of Disability Retirees	20
▶ Number Who Reported Earnings	8
▶ Number of Excess Earners	0
▶ Total Amount of Refund Due	\$0

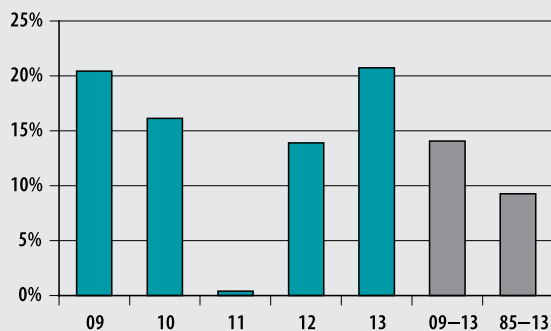
▶ 2013 Return	14.79%
▶ 2013 Market Value	\$21.6 M
▶ 2009-2013 (Annualized)	11.66%
▶ 1985-2013 (Annualized)	7.45%



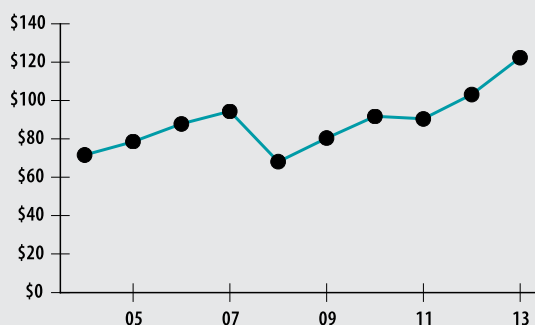
### FUNDED RATIO (1987-2013)



### INVESTMENT RETURN (2009-2013, 5 YEAR AND 29 YEAR AVERAGES)



### ASSET GROWTH (2004-2013) (MARKET VALUE IN MILLIONS)



### INVESTMENT RETURN HISTORY

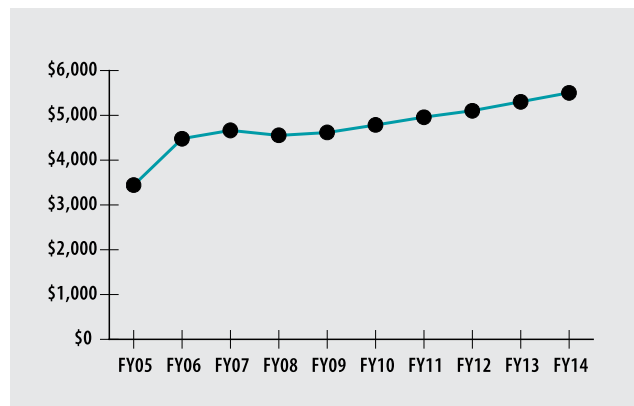
<b>29 years 2013</b> 9.28%	<b>28 years 2012</b> 8.89%	<b>27 years 2011</b> 8.71%
<b>10 years 2013</b> 7.95%	<b>10 years 2012</b> 8.10%	<b>10 years 2011</b> 6.13%
<b>5 years 2013</b> 14.08%	<b>5 years 2012</b> 3.04%	<b>5 years 2011</b> 2.00%

### ACTUARIAL

▶ Funded Ratio	65.1%
▶ Date of Last Valuation	01/12
▶ Actuary	Stone Consulting
▶ Assumed Rate of Return	8.00%
▶ Funding Schedule	4.5% Increasing
▶ Year Fully Funded	2030
▶ Unfunded Liability	\$53.0 M
▶ Total Pension Appropriation (Fiscal 2014)	\$5.5 M

	ACTIVE	RETIRED
▶ Number of Members	618	390
▶ Total Payroll/Benefit	\$27.6 M	\$8.5 M
▶ Average Salary/Benefit	\$44,600	\$21,800
▶ Average Age	48	74
▶ Average Service	12.9 years	NA

### 10-YEAR HISTORY OF APPROPRIATIONS (IN THOUSANDS)

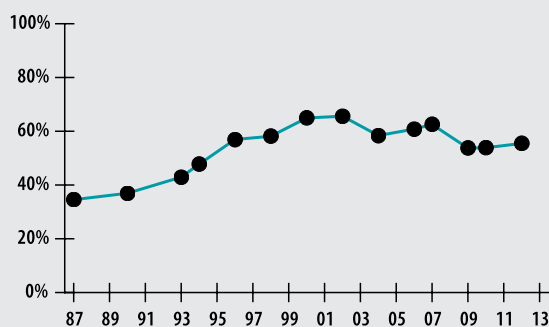


### EARNED INCOME OF DISABILITY RETIREES (2012)

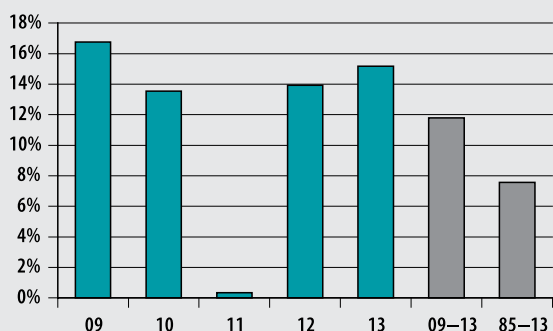
▶ Number of Disability Retirees	41
▶ Number Who Reported Earnings	9
▶ Number of Excess Earners	0
▶ Total Amount of Refund Due	\$0

▶ 2013 Return	20.74%
▶ 2013 Market Value	\$122.3 M
▶ 2009-2013 (Annualized)	14.08%
▶ 1985-2013 (Annualized)	9.28%

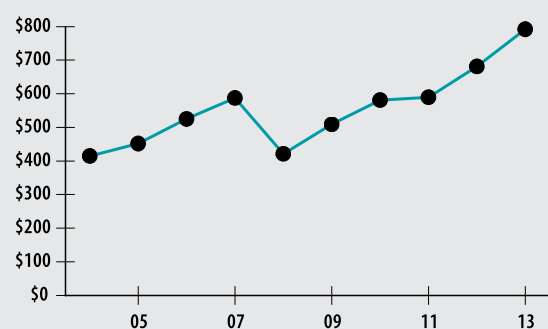
#### FUNDED RATIO (1987-2013)



#### INVESTMENT RETURN (2009-2013, 5 YEAR AND 29 YEAR AVERAGES)



#### ASSET GROWTH (2004-2013) (MARKET VALUE IN MILLIONS)



#### INVESTMENT RETURN HISTORY

**29 years 2013**  
7.58%

**28 years 2012**  
7.32%

**27 years 2011**  
7.08%

**10 years 2013**  
6.32%

**10 years 2012**  
6.98%

**10 years 2011**  
4.51%

**5 years 2013**  
11.79%

**5 years 2012**  
1.44%

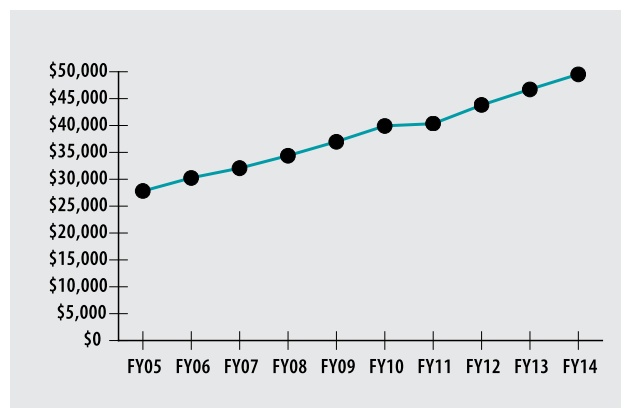
**5 years 2011**  
0.59%

#### ACTUARIAL

▶ Funded Ratio	55.5%
▶ Date of Last Valuation	01/12
▶ Actuary	The Segal Company
▶ Assumed Rate of Return	7.88%
▶ Funding Schedule	4.0% Increasing Phase-in
▶ Year Fully Funded	2038
▶ Unfunded Liability	\$522.4 M
▶ Total Pension Appropriation (Fiscal 2014)	\$49.5 M

	ACTIVE	RETIRED
▶ Number of Members	4,670	2,556
▶ Total Payroll/Benefit	\$239.4 M	\$54.3 M
▶ Average Salary/Benefit	\$51,300	\$21,200
▶ Average Age	49	NA
▶ Average Service	11.9 years	NA

#### 10-YEAR HISTORY OF APPROPRIATIONS (IN THOUSANDS)



#### EARNED INCOME OF DISABILITY RETIREES (2012)

▶ Number of Disability Retirees	345
▶ Number Who Reported Earnings	106
▶ Number of Excess Earners	2
▶ Total Amount of Refund Due	\$9,921

▶ 2013 Return	15.19%
▶ 2013 Market Value	\$792.1 M
▶ 2009-2013 (Annualized)	11.79%
▶ 1985-2013 (Annualized)	7.58%

## Belmont

Town Hall Annex  
P.O. Box 56, 455 Concord Avenue  
Belmont, MA 02478-0900  
Phone 617-484-8560  
Fax 617-993-2793

### Board Members

Rosario A. Sacco (Chairperson),  
Thomas F. Gibson, Esq., James Sloman,  
Chitra Subramanian, Walter D. Wellman

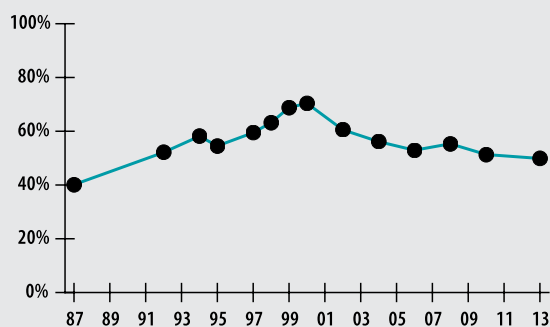
### Board Administrator

Marion E. Coté

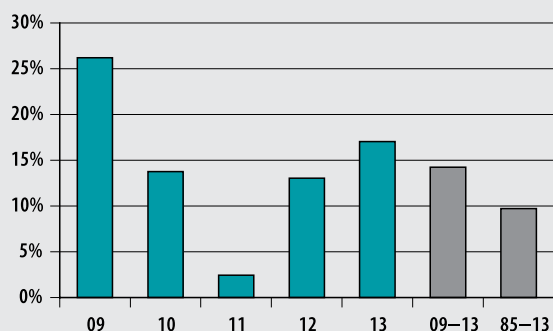
### Board Meeting

Varies

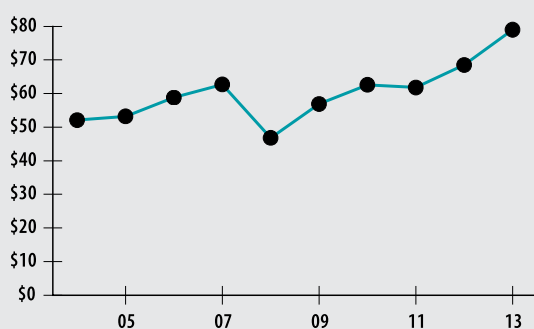
### FUNDED RATIO (1987-2013)



### INVESTMENT RETURN (2009-2013, 5 YEAR AND 29 YEAR AVERAGES)



### ASSET GROWTH (2004-2013) (MARKET VALUE IN MILLIONS)



### INVESTMENT RETURN HISTORY

**29 years 2013**  
9.73%

**28 years 2012**  
9.48%

**27 years 2011**  
9.35%

**10 years 2013**  
8.87%

**10 years 2012**  
9.19%

**10 years 2011**  
7.12%

**5 years 2013**  
14.25%

**5 years 2012**  
5.20%

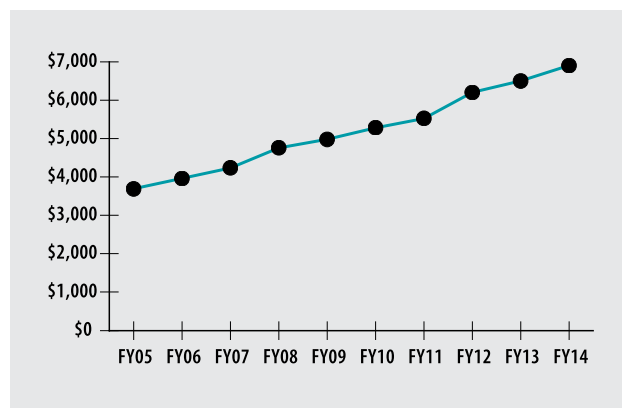
**5 years 2011**  
4.76%

## ACTUARIAL

▶ Funded Ratio	49.9%
▶ Date of Last Valuation	01/12
▶ Actuary	Buck Consultants
▶ Assumed Rate of Return	7.75%
▶ Funding Schedule	4.5% Increasing Phase-in
▶ Year Fully Funded	2027
▶ Unfunded Liability	\$67.4 M
▶ Total Pension Appropriation (Fiscal 2014)	\$6.9 M

	ACTIVE	RETIRED
▶ Number of Members	432	341
▶ Total Payroll/Benefit	\$20.8 M	\$9.1 M
▶ Average Salary/Benefit	\$48,200	\$26,700
▶ Average Age	47	NA
▶ Average Service	10.3 years	NA

## 10-YEAR HISTORY OF APPROPRIATIONS (IN THOUSANDS)

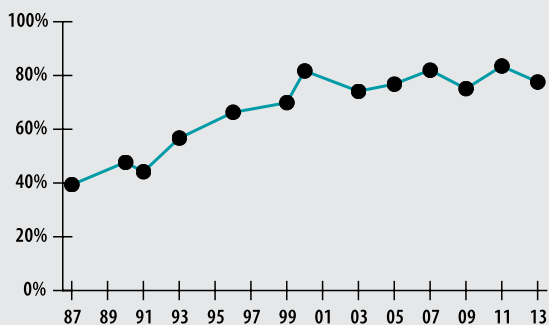


## EARNED INCOME OF DISABILITY RETIREES (2012)

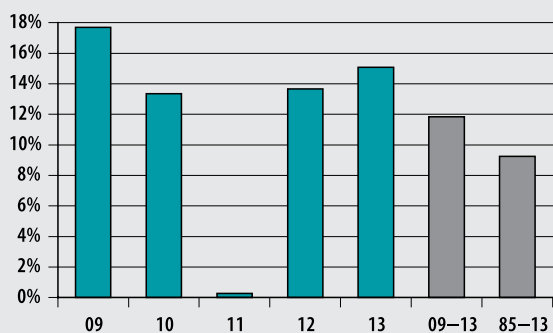
▶ Number of Disability Retirees	43
▶ Number Who Reported Earnings	16
▶ Number of Excess Earners	0
▶ Total Amount of Refund Due	\$0

▶ 2013 Return	17.07%
▶ 2013 Market Value	\$79.0 M
▶ 2009-2013 (Annualized)	14.25%
▶ 1985-2013 (Annualized)	9.73%

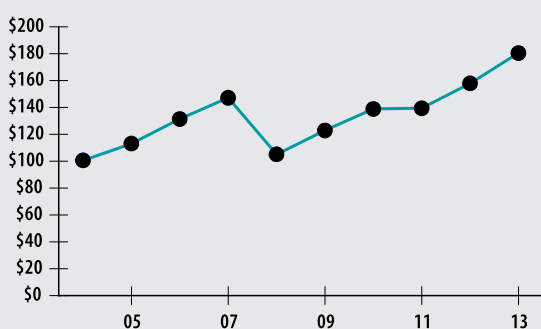
#### FUNDED RATIO (1987-2013)



#### INVESTMENT RETURN (2009-2013, 5 YEAR AND 29 YEAR AVERAGES)



#### ASSET GROWTH (2004-2013) (MARKET VALUE IN MILLIONS)



#### INVESTMENT RETURN HISTORY

**29 years 2013**  
9.25%

**28 years 2012**  
9.05%

**27 years 2011**  
8.88%

**10 years 2013**  
7.61%

**10 years 2012**  
8.55%

**10 years 2011**  
6.20%

**5 years 2013**  
11.85%

**5 years 2012**  
1.53%

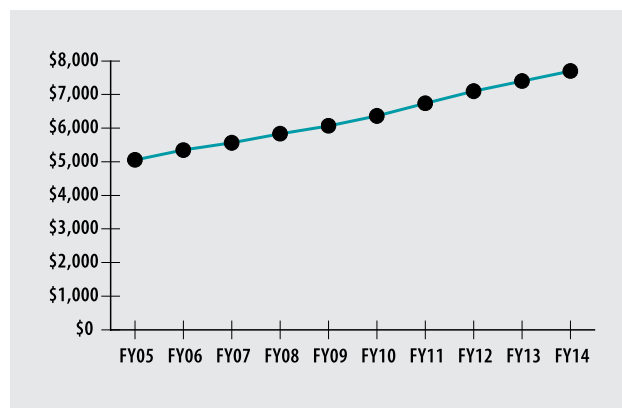
**5 years 2011**  
1.22%

#### ACTUARIAL

▶ Funded Ratio	77.6%
▶ Date of Last Valuation	01/13
▶ Actuary	PERAC
▶ Assumed Rate of Return	7.75%
▶ Funding Schedule	4.7% Total Increasing
▶ Year Fully Funded	2025
▶ Unfunded Liability	\$44.8 M
▶ Total Pension Appropriation (Fiscal 2014)	\$7.7 M

	ACTIVE	RETIRED
▶ Number of Members	1,165	697
▶ Total Payroll/Benefit	\$41.2 M	\$9.9 M
▶ Average Salary/Benefit	\$35,400	\$14,200
▶ Average Age	50	74
▶ Average Service	11.4 years	NA

#### 10-YEAR HISTORY OF APPROPRIATIONS (IN THOUSANDS)



#### EARNED INCOME OF DISABILITY RETIREES (2012)

▶ Number of Disability Retirees	25
▶ Number Who Reported Earnings	5
▶ Number of Excess Earners	0
▶ Total Amount of Refund Due	\$0

▶ 2013 Return	15.08%
▶ 2013 Market Value	\$180.4 M
▶ 2009-2013 (Annualized)	11.85%
▶ 1985-2013 (Annualized)	9.25%

## Beverly

City Hall  
191 Cabot Street  
Beverly, MA 01915  
Phone 978-605-2370  
Fax 978-921-8582

### Board Members

John F. Lane, Jr. (Chairperson),  
Bryant Ayles, Carol I. Augulewicz,  
Clark Mitchell, Richard F. Pierce

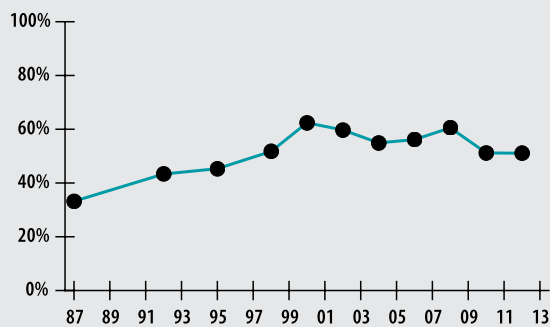
### Board Administrator

Barbara Wells

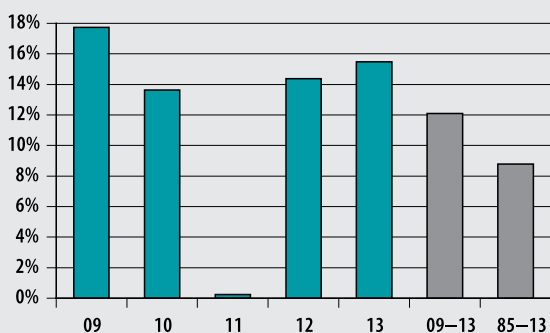
### Board Meeting

Last Thursday of each month

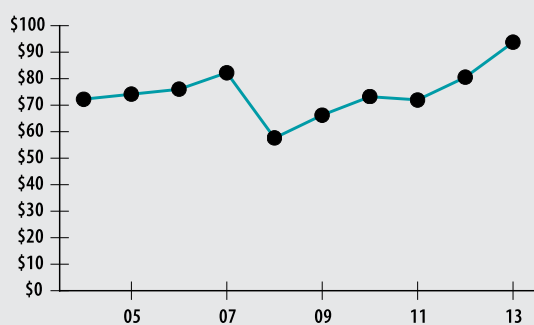
### FUNDED RATIO (1987-2013)



### INVESTMENT RETURN (2009-2013, 5 YEAR AND 29 YEAR AVERAGES)



### ASSET GROWTH (2004-2013) (MARKET VALUE IN MILLIONS)



### INVESTMENT RETURN HISTORY

#### 29 years 2013

8.78%

#### 28 years 2012

8.55%

#### 27 years 2011

8.34%

#### 10 years 2013

5.86%

#### 10 years 2012

6.48%

#### 10 years 2011

4.65%

#### 5 years 2013

12.11%

#### 5 years 2012

1.60%

#### 5 years 2011

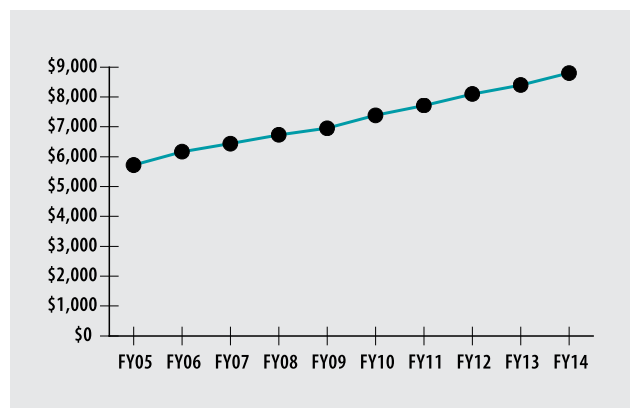
0.68%

## ACTUARIAL

▶ Funded Ratio	51.1%
▶ Date of Last Valuation	01/12
▶ Actuary	PERAC
▶ Assumed Rate of Return	8.00%
▶ Funding Schedule	4.5% Increasing
▶ Year Fully Funded	2030
▶ Unfunded Liability	\$78.9 M
▶ Total Pension Appropriation (Fiscal 2014)	\$8.8 M

	ACTIVE	RETIRED
▶ Number of Members	540	429
▶ Total Payroll/Benefit	\$24.0 M	\$10.3 M
▶ Average Salary/Benefit	\$44,500	\$24,100
▶ Average Age	49	73
▶ Average Service	11.7 years	NA

## 10-YEAR HISTORY OF APPROPRIATIONS (IN THOUSANDS)

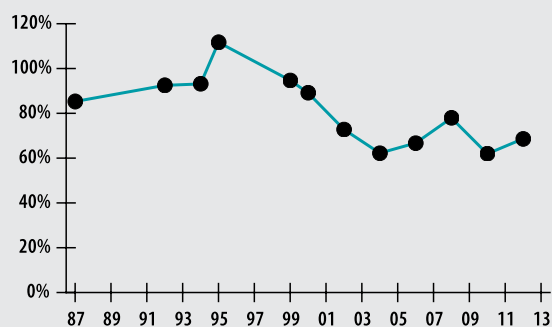


## EARNED INCOME OF DISABILITY RETIREES (2012)

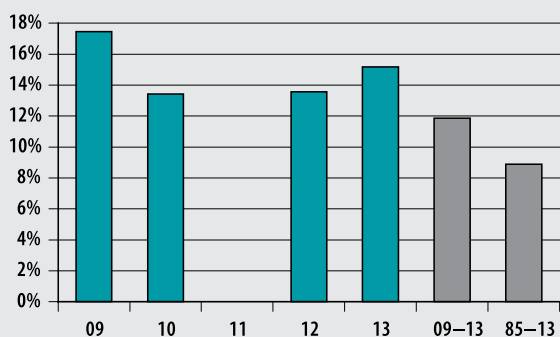
▶ Number of Disability Retirees	58
▶ Number Who Reported Earnings	8
▶ Number of Excess Earners	1
▶ Total Amount of Refund Due	\$12,821

▶ 2013 Return	15.48%
▶ 2013 Market Value	\$93.7 M
▶ 2009-2013 (Annualized)	12.11%
▶ 1985-2013 (Annualized)	8.78%

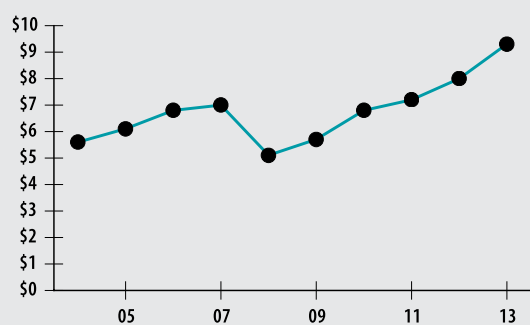
#### FUNDED RATIO (1987-2013)



#### INVESTMENT RETURN (2009-2013, 5 YEAR AND 29 YEAR AVERAGES)



#### ASSET GROWTH (2004-2013) (MARKET VALUE IN MILLIONS)



#### INVESTMENT RETURN HISTORY

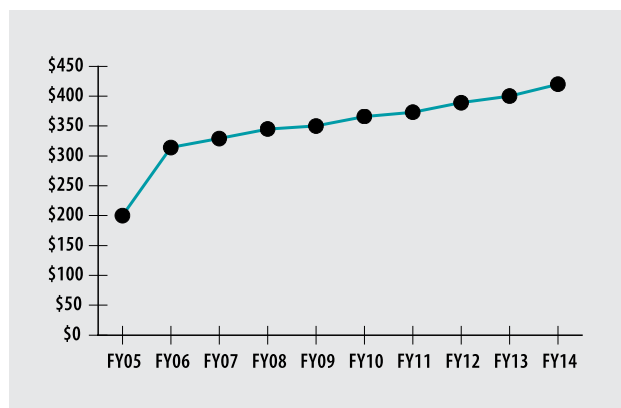
<b>29 years 2013</b> 8.89%	<b>28 years 2012</b> 8.67%	<b>27 years 2011</b> 8.49%
<b>10 years 2013</b> 7.70%	<b>10 years 2012</b> 8.63%	<b>10 years 2011</b> 6.29%
<b>5 years 2013</b> 11.87%	<b>5 years 2012</b> 1.77%	<b>5 years 2011</b> 1.48%

#### ACTUARIAL

▶ Funded Ratio	68.6%
▶ Date of Last Valuation	01/12
▶ Actuary	PERAC
▶ Assumed Rate of Return	8.00%
▶ Funding Schedule	4.0% Increasing
▶ Year Fully Funded	2032
▶ Unfunded Liability	\$3.6 M
▶ Total Pension Appropriation (Fiscal 2014)	\$420,000

	ACTIVE	RETIRED
▶ Number of Members	42	54
▶ Total Payroll/Benefit	\$1.8 M	\$800,000
▶ Average Salary/Benefit	\$43,600	\$15,100
▶ Average Age	51	78
▶ Average Service	12.3 years	NA

#### 10-YEAR HISTORY OF APPROPRIATIONS (IN THOUSANDS)



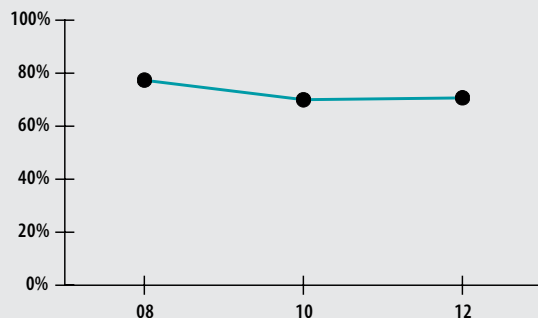
#### EARNED INCOME OF DISABILITY RETIREES (2012)

▶ Number of Disability Retirees	0
▶ Number Who Reported Earnings	0
▶ Number of Excess Earners	0
▶ Total Amount of Refund Due	\$0

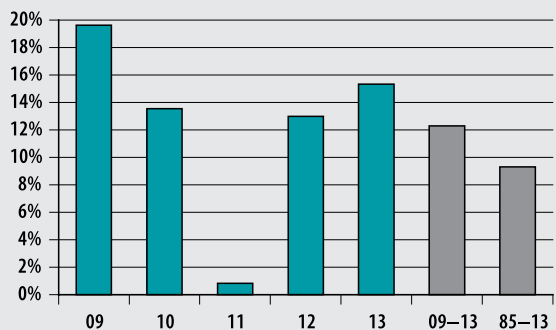
▶ 2013 Return	15.17%
▶ 2013 Market Value	\$9.3 M
▶ 2009-2013 (Annualized)	11.87%
▶ 1985-2013 (Annualized)	8.89%



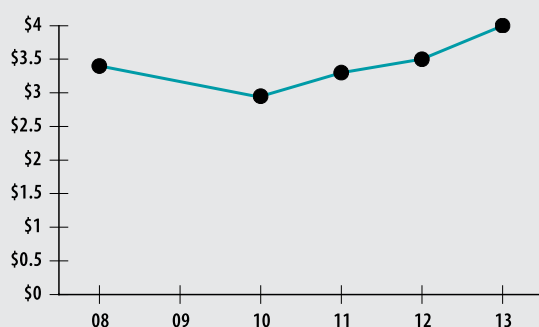
#### FUNDED RATIO (2008-2013)



#### INVESTMENT RETURN (2009-2013, 5 YEAR AND 29 YEAR AVERAGES)



#### ASSET GROWTH (MARKET VALUE IN BILLIONS)



#### INVESTMENT RETURN HISTORY

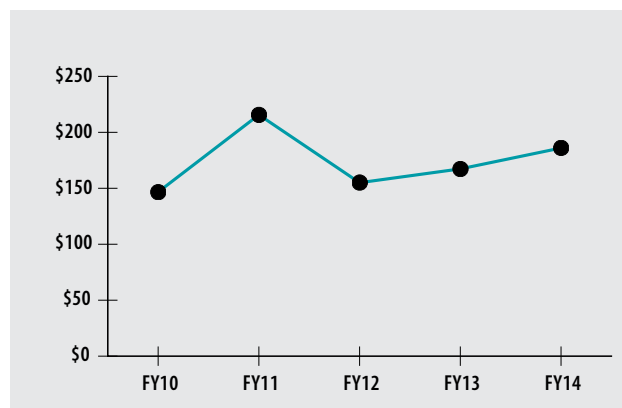
<b>29 years 2013</b> 9.32%	<b>28 years 2012</b> 9.11%	<b>27 years 2011</b> 8.97%
<b>10 years 2013</b> 7.65%	<b>10 years 2012</b> 8.36%	<b>10 years 2011</b> 5.95%
<b>5 years 2013</b> 12.30%	<b>5 years 2012</b> 3.25%	<b>5 years 2011</b> 2.77%

#### ACTUARIAL

▶ Funded Ratio	70.7%
▶ Date of Last Valuation	01/12
▶ Actuary	The Segal Company
▶ Assumed Rate of Return	7.75%
▶ Funding Schedule	9.25% Total Increasing
▶ Year Fully Funded	2025
▶ Unfunded Liability	\$1.5 B
▶ Total Pension Appropriation (Fiscal 2014)	\$185.9 M

	ACTIVE	RETIRED
▶ Number of Members	13,951	10,000
▶ Total Payroll/Benefit	\$802.9 M	\$271.7 M
▶ Average Salary/Benefit	\$57,600	\$27,200
▶ Average Age	47	74
▶ Average Service	14.4 years	NA

#### HISTORY OF APPROPRIATIONS (IN THOUSANDS)



#### EARNED INCOME OF DISABILITY RETIREES (2012)\*

▶ Number of Disability Retirees	1,866
▶ Number Who Reported Earnings	295
▶ Number of Excess Earners	16
▶ Total Amount of Refund Due	\$157,231

▶ 2013 Return	15.34%
▶ 2013 Market Value	\$4.0 B
▶ 2009-2013 (Annualized)	12.30%
▶ 1985-2013 (Annualized)	9.32%

\*See **Notes** on Boston (Teachers) board profile page.

## Boston Teachers

City Hall  
Room 816  
Boston, MA 02201  
Phone 617-635-4305  
Fax 617-635-4318

### Board Members

Sean Kelly (Chairperson),  
Sally D. Glora, Daniel J. Greene, Esq.,  
Thomas V. J. Jackson, Michael W. McLaughlin

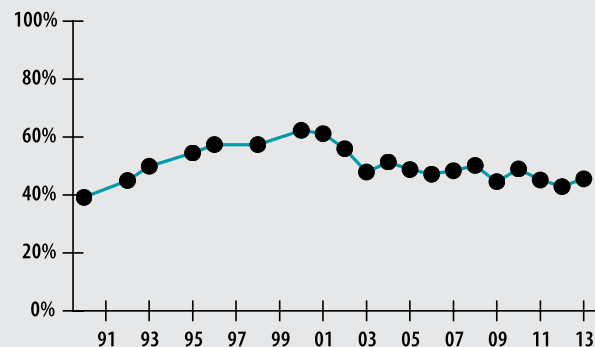
### Board Administrator

Timothy J. Smyth

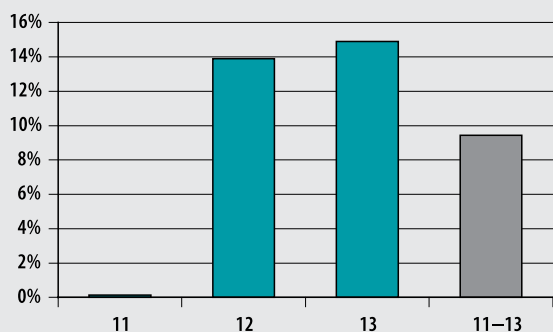
### Board Meeting

Second Wednesday of each month  
at 10:00 am

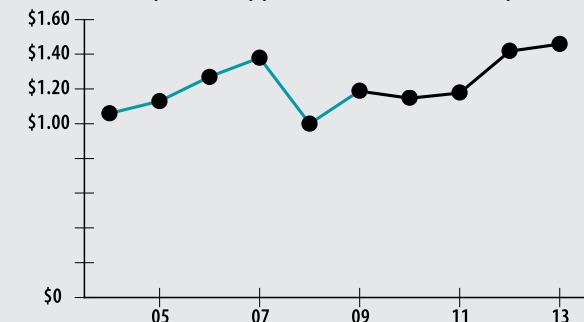
### FUNDED RATIO (1990-2013)



### INVESTMENT RETURN (2011-2013, 3 YEAR AVERAGE)



### ASSET GROWTH (2004-2013) (MARKET VALUE IN BILLIONS)

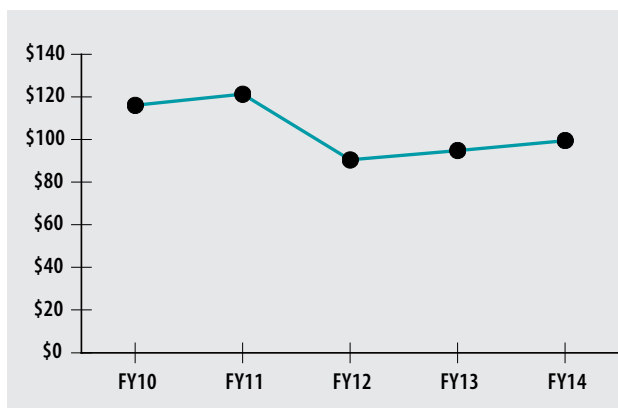


## ACTUARIAL

▶ Funded Ratio	45.6%
▶ Date of Last Valuation	01/13
▶ Actuary	PERAC
▶ Assumed Rate of Return	8.0%
▶ Funding Schedule	Varies Total Increasing
▶ Year Fully Funded	2036
▶ Unfunded Liability	\$1.7 B
▶ Total Pension Appropriation (Fiscal 2014)	\$99.5 M

	ACTIVE	RETIRED
▶ Number of Members	5,492	4,235
▶ Total Payroll/Benefit	\$441.9 M	\$197.3 M
▶ Average Salary/Benefit	\$80,500	\$46,600
▶ Average Age	43	71
▶ Average Service	12.8 years	NA

## HISTORY OF APPROPRIATIONS (IN THOUSANDS)



## NOTES — BOSTON (CITY) & BOSTON TEACHERS

In this report we have separated the results for Boston Teachers and non-teachers (City). The liability for Boston Teachers has always been the responsibility of the Commonwealth. In 2010, legislation was enacted that allocated assets to Boston Teachers and separate accounts have been maintained since that date. The actuarial information for the City now solely reflects liability that is the responsibility of the City. The Funded Ratio, History of Appropriations and Asset Growth charts for the City reflect information available since this allocation.

Please note the following when reviewing the charts on these pages:

- ▶ Boston Teachers' assets prior to 2010 were estimated as approximately 30% of Boston (System) total assets.
- ▶ The information with respect to Disability Retirees on the City Board Profile page reflects the entire system, including Boston Teachers.
- ▶ The information with respect to Investment Return History for the City reflects actual returns for Boston (City) for 2011-2013 and total returns for the Boston System prior to 2011.

▶ 2013 Return	14.90%
▶ 2013 Market Value	\$1.5 B
▶ 2011-2013 (Annualized)	9.43%

**Board Members**

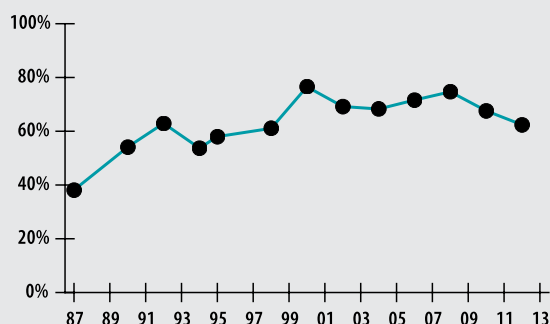
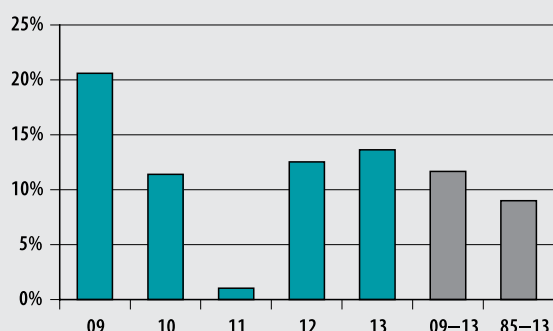
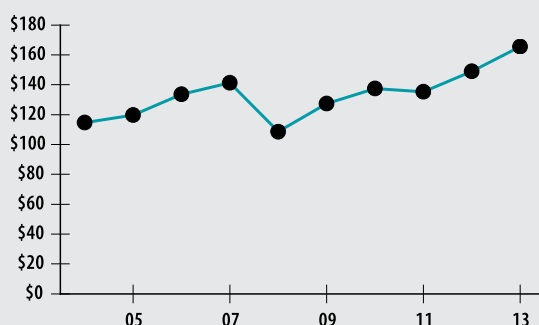
Gerald J. Kenny, Jr. (Chairperson),  
Phyllis DiPalma, Michael F. MacLean,  
Peter J. Morin, Edward J. Spellman

**Board Administrator**

Jeanne Martineau

**Board Meeting**

Fourth Wednesday of each month

**FUNDED RATIO (1987-2013)**

**INVESTMENT RETURN (2009-2013, 5 YEAR AND 29 YEAR AVERAGES)**

**ASSET GROWTH (2004-2013) (MARKET VALUE IN MILLIONS)**

**INVESTMENT RETURN HISTORY**
**29 years 2013**

9.00%

**28 years 2012**

8.83%

**27 years 2011**

8.70%

**10 years 2013**

7.25%

**10 years 2012**

8.24%

**10 years 2011**

6.01%

**5 years 2013**

11.68%

**5 years 2012**

3.75%

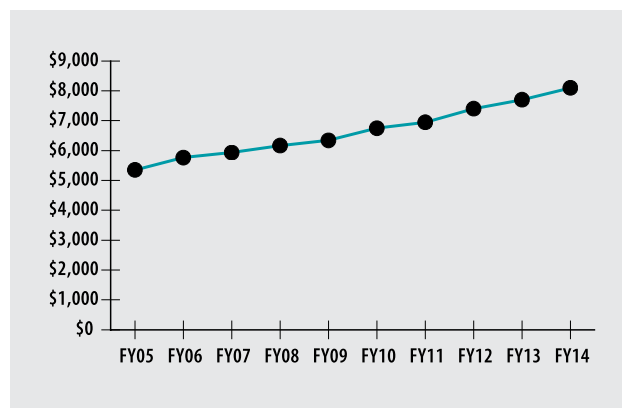
**5 years 2011**

2.87%

**ACTUARIAL**

▶ Funded Ratio	62.4%
▶ Date of Last Valuation	01/12
▶ Actuary	Stone Consulting
▶ Assumed Rate of Return	7.88%
▶ Funding Schedule	4.0% Increasing
▶ Year Fully Funded	2033
▶ Unfunded Liability	\$83.0 M
▶ Total Pension Appropriation (Fiscal 2014)	\$8.1 M

	ACTIVE	RETIRED
▶ Number of Members	714	496
▶ Total Payroll/Benefit	\$36.5 M	\$12.9 M
▶ Average Salary/Benefit	\$51,100	\$26,100
▶ Average Age	50	74
▶ Average Service	12.9 years	NA

**10-YEAR HISTORY OF APPROPRIATIONS (IN THOUSANDS)**

**EARNED INCOME OF DISABILITY RETIREES (2012)**

▶ Number of Disability Retirees	66
▶ Number Who Reported Earnings	17
▶ Number of Excess Earners	0
▶ Total Amount of Refund Due	\$0

▶ 2013 Return	13.65%
▶ 2013 Market Value	\$165.6 M
▶ 2009-2013 (Annualized)	11.68%
▶ 1985-2013 (Annualized)	9.00%

## Bristol County

County Crossing  
645 County Street  
Taunton, MA 02780  
Phone 508-824-4029  
Fax 508-880-8749

### Board Members

Christopher T. Saunders, Esq. (Chairperson),  
Christine N. DeFontes, William M. Downey,  
Paul T. Kitchen, Stephen J. Rivard

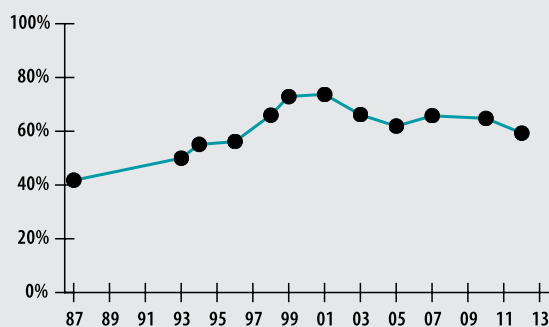
### Board Administrator

Roxanne Donovan

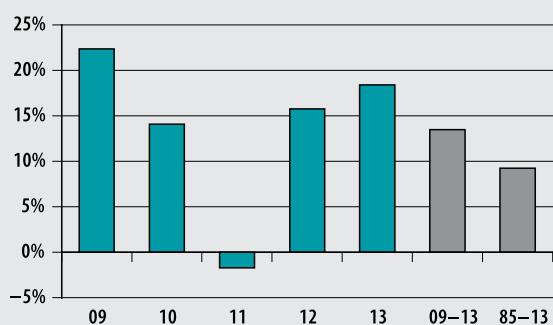
### Board Meeting

Last Thursday of each month

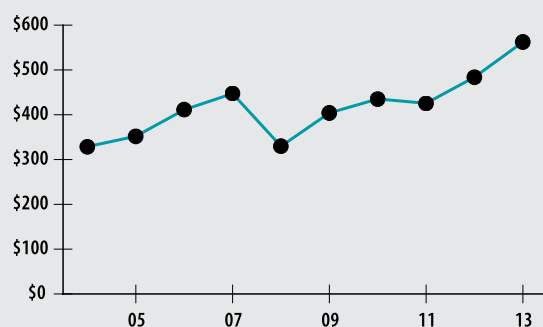
### FUNDED RATIO (1987-2013)



### INVESTMENT RETURN (2009-2013, 5 YEAR AND 29 YEAR AVERAGES)



### ASSET GROWTH (2004-2013) (MARKET VALUE IN MILLIONS)



### INVESTMENT RETURN HISTORY

**29 years 2013**  
9.25%

**28 years 2012**  
8.94%

**27 years 2011**  
8.69%

**10 years 2013**  
7.27%

**10 years 2012**  
7.69%

**10 years 2011**  
5.06%

**5 years 2013**  
13.48%

**5 years 2012**  
3.23%

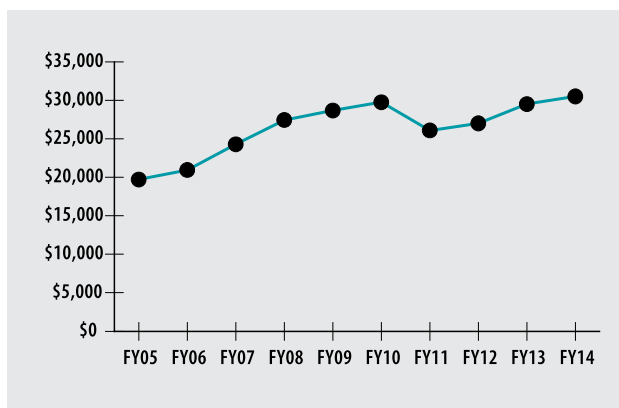
**5 years 2011**  
1.72%

## ACTUARIAL

▶ Funded Ratio	59.3%
▶ Date of Last Valuation	01/12
▶ Actuary	Sherman Actuarial Services, LLC
▶ Assumed Rate of Return	8.00%
▶ Funding Schedule	4.5% Increasing
▶ Year Fully Funded	2030
▶ Unfunded Liability	\$316.2 M
▶ Total Pension Appropriation (Fiscal 2014)	\$30.5 M

	ACTIVE	RETIRED
▶ Number of Members	3,246	2,239
▶ Total Payroll/Benefit	\$137.2 M	\$43.1 M
▶ Average Salary/Benefit	\$42,300	\$19,300
▶ Average Age	NA	72
▶ Average Service	NA	NA

## 10-YEAR HISTORY OF APPROPRIATIONS (IN THOUSANDS)



## EARNED INCOME OF DISABILITY RETIREES (2012)

▶ Number of Disability Retirees	255
▶ Number Who Reported Earnings	68
▶ Number of Excess Earners	4
▶ Total Amount of Refund Due	\$20,712

▶ 2013 Return	18.43%
▶ 2013 Market Value	\$562.1 M
▶ 2009-2013 (Annualized)	13.48%
▶ 1985-2013 (Annualized)	9.25%

## Brockton

15 Christy's Drive  
Suite 2  
Brockton, MA 02301-1813  
Phone 508-580-7847  
Fax 508-559-0559

### Board Members

William R. Farmer (Chairperson),  
Heidi A. Chuckran, Edward P. Mack,  
Matthew J. McLaughlin, William E. Parlow

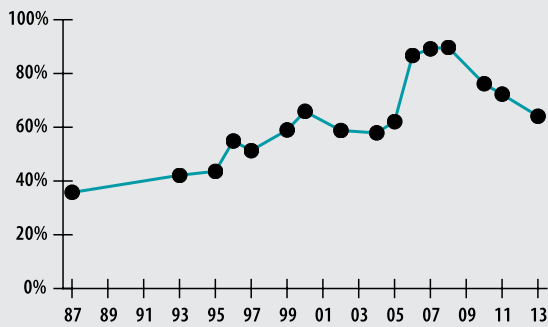
### Board Administrator

Harold P. Hanna, Jr.

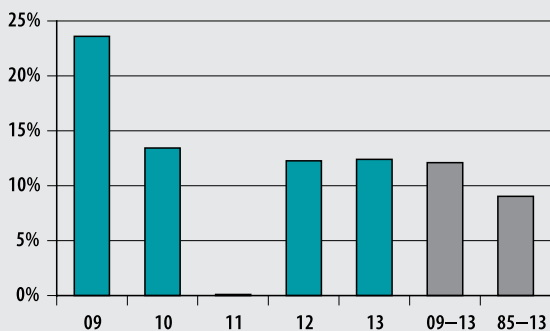
### Board Meeting

Usually a day in last week of the month

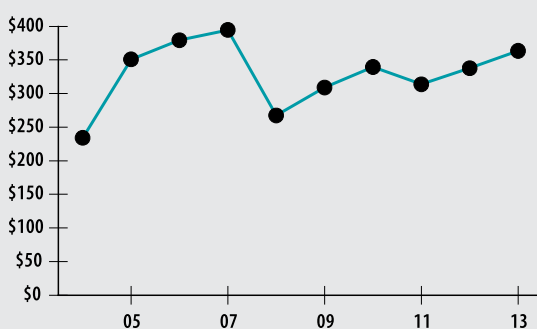
### FUNDED RATIO (1987-2013)



### INVESTMENT RETURN (2009-2013, 5 YEAR AND 29 YEAR AVERAGES)



### ASSET GROWTH (2004-2013) (MARKET VALUE IN MILLIONS)



### INVESTMENT RETURN HISTORY

**29 years 2013**  
9.06%

**28 years 2012**  
8.94%

**27 years 2011**  
8.82%

**10 years 2013**  
6.39%

**10 years 2012**  
7.54%

**10 years 2011**  
5.09%

**5 years 2013**  
12.12%

**5 years 2012**  
2.20%

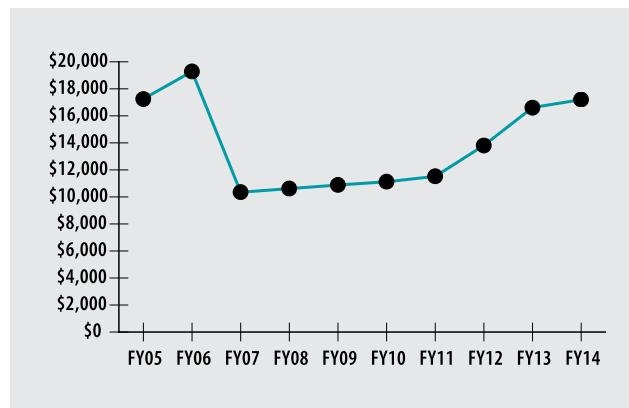
**5 years 2011**  
1.22%

## ACTUARIAL

▶ Funded Ratio	64.1%
▶ Date of Last Valuation	01/13
▶ Actuary	Buck Consultants
▶ Assumed Rate of Return	8.00%
▶ Funding Schedule	4.5% Increasing
▶ Year Fully Funded	2033
▶ Unfunded Liability	\$186.1 M
▶ Total Pension Appropriation (Fiscal 2014)	\$17.2 M

	ACTIVE	RETIRED
▶ Number of Members	1,692	1,262
▶ Total Payroll/Benefit	\$76.4 M	\$35.5 M
▶ Average Salary/Benefit	\$45,100	\$28,100
▶ Average Age	NA	74
▶ Average Service	NA	NA

## 10-YEAR HISTORY OF APPROPRIATIONS (IN THOUSANDS)



## EARNED INCOME OF DISABILITY RETIREES (2012)

▶ Number of Disability Retirees	194
▶ Number Who Reported Earnings	29
▶ Number of Excess Earners	1
▶ Total Amount of Refund Due	\$469

▶ 2013 Return	12.42%
▶ 2013 Market Value	\$363.5 M
▶ 2009-2013 (Annualized)	12.12%
▶ 1985-2013 (Annualized)	9.06%

**Board Members**

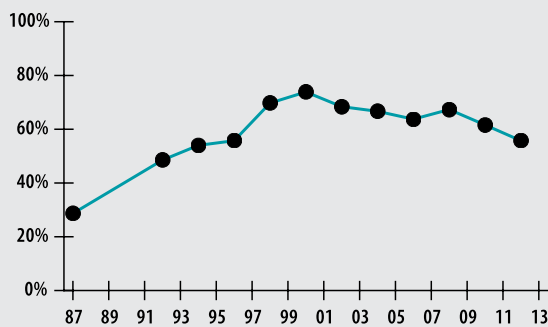
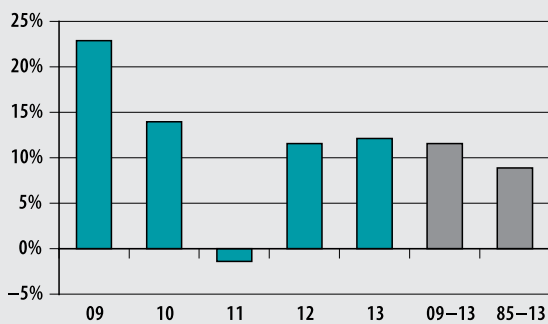
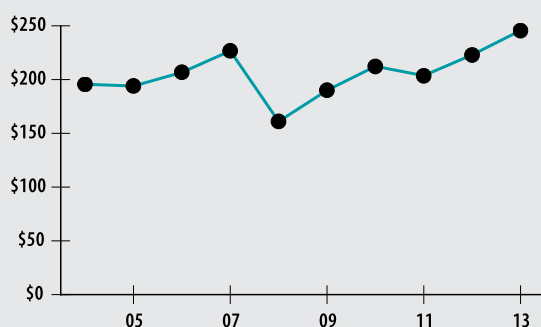
James J. Riley (Chairperson),  
Gary Altman, Stephan E. Cirillo,  
Michael F. DiPietro, Robert J. Ward

**Board Administrator**

Frank J. Zecha

**Board Meeting**

Varies

**FUNDED RATIO (1987-2013)**

**INVESTMENT RETURN (2009-2013, 5 YEAR AND 29 YEAR AVERAGES)**

**ASSET GROWTH (2004-2013) (MARKET VALUE IN MILLIONS)**

**INVESTMENT RETURN HISTORY**

**29 years 2013**  
8.90%

**28 years 2012**  
8.79%

**27 years 2011**  
8.68%

**10 years 2013**  
6.18%

**10 years 2012**  
6.95%

**10 years 2011**  
5.26%

**5 years 2013**  
11.57%

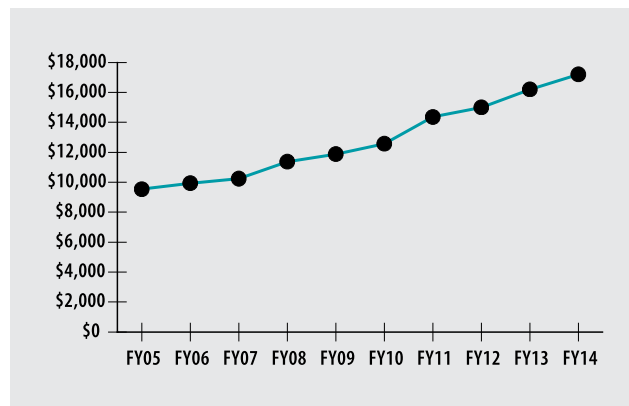
**5 years 2012**  
2.11%

**5 years 2011**  
1.25%

**ACTUARIAL**

▶ Funded Ratio	55.8%
▶ Date of Last Valuation	01/12
▶ Actuary	The Segal Company
▶ Assumed Rate of Return	7.75%
▶ Funding Schedule	5.9% Total Increasing
▶ Year Fully Funded	2030
▶ Unfunded Liability	\$176.1 M
▶ Total Pension Appropriation (Fiscal 2014)	\$17.2 M

	ACTIVE	RETIRED
▶ Number of Members	1,188	875
▶ Total Payroll/Benefit	\$58.8 M	\$24.0 M
▶ Average Salary/Benefit	\$49,500	\$27,500
▶ Average Age	44	NA
▶ Average Service	11.7 years	NA

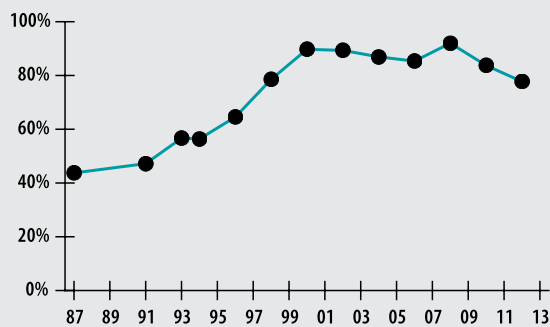
**10-YEAR HISTORY OF APPROPRIATIONS (IN THOUSANDS)**

**EARNED INCOME OF DISABILITY RETIREES (2012)**

▶ Number of Disability Retirees	178
▶ Number Who Reported Earnings	36
▶ Number of Excess Earners	0
▶ Total Amount of Refund Due	\$0

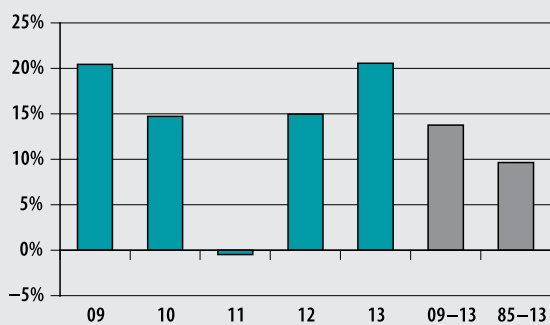
▶ 2013 Return	12.13%
▶ 2013 Market Value	\$245.4 M
▶ 2009-2013 (Annualized)	11.57%
▶ 1985-2013 (Annualized)	8.90%



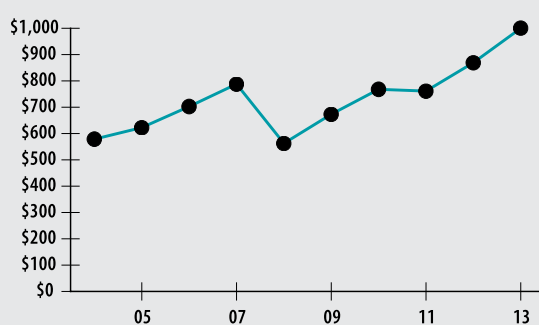
#### FUNDED RATIO (1987-2013)



#### INVESTMENT RETURN (2009-2013, 5 YEAR AND 29 YEAR AVERAGES)



#### ASSET GROWTH (2004-2013) (MARKET VALUE IN MILLIONS)



#### INVESTMENT RETURN HISTORY

<b>29 years 2013</b> 9.65%	<b>28 years 2012</b> 9.28%	<b>27 years 2011</b> 9.08%
<b>10 years 2013</b> 7.33%	<b>10 years 2012</b> 7.27%	<b>10 years 2011</b> 5.05%
<b>5 years 2013</b> 13.78%	<b>5 years 2012</b> 2.46%	<b>5 years 2011</b> 1.90%

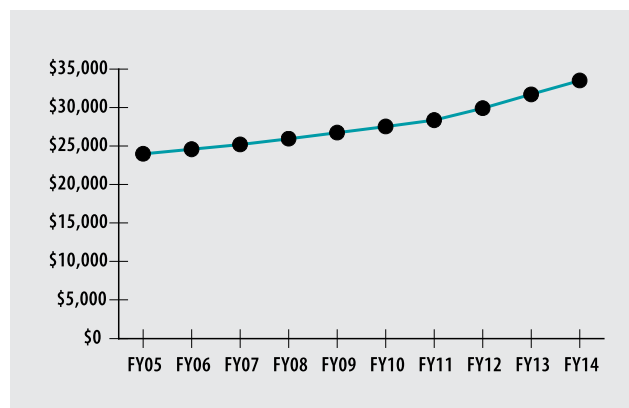
#### ACTUARIAL

▶ Funded Ratio	77.8%
▶ Date of Last Valuation	01/12
▶ Actuary	The Segal Company
▶ Assumed Rate of Return	8.00%
▶ Funding Schedule	5.85% Total Increasing
▶ Year Fully Funded	2029
▶ Unfunded Liability	\$237.8 M
▶ Total Pension Appropriation (Fiscal 2014)	\$33.5 M

	ACTIVE	RETIRED
▶ Number of Members	3,332	1,893
▶ Total Payroll/Benefit	\$217.7 M	\$52.2 M
▶ Average Salary/Benefit	\$65,200	\$27,600
▶ Average Age	47	NA
▶ Average Service	13.5 years	NA

#### 10-YEAR HISTORY OF APPROPRIATIONS (IN THOUSANDS)

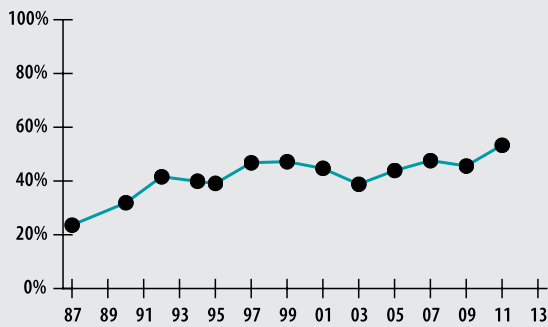


#### EARNED INCOME OF DISABILITY RETIREES (2012)

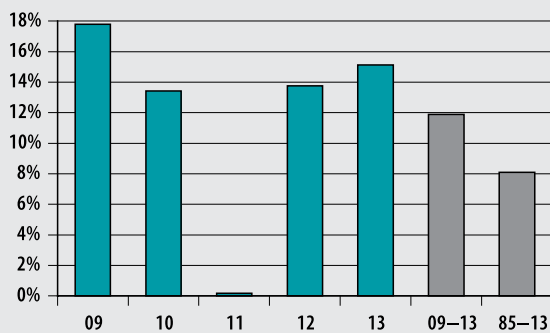
▶ Number of Disability Retirees	257
▶ Number Who Reported Earnings	47
▶ Number of Excess Earners	2
▶ Total Amount of Refund Due	\$15,011

▶ 2013 Return	20.57%
▶ 2013 Market Value	\$1.0 B
▶ 2009-2013 (Annualized)	13.78%
▶ 1985-2013 (Annualized)	9.65%

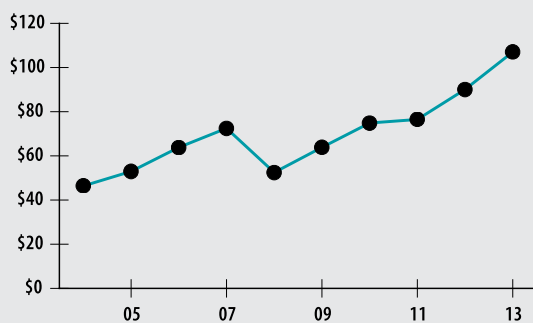
### FUNDED RATIO (1987-2013)



### INVESTMENT RETURN (2009-2013, 5 YEAR AND 29 YEAR AVERAGES)



### ASSET GROWTH (2004-2013) (MARKET VALUE IN MILLIONS)



### INVESTMENT RETURN HISTORY

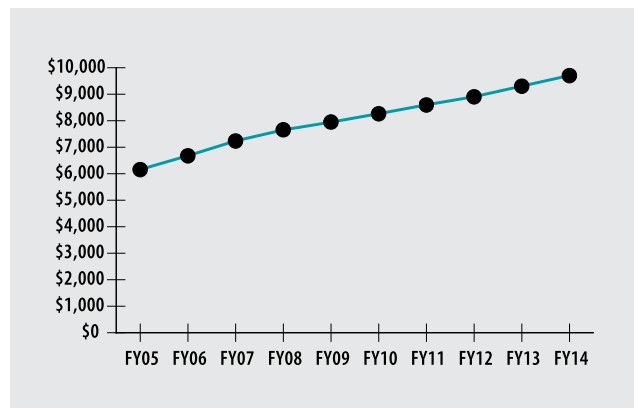
<b>29 years 2013</b> 8.10%	<b>28 years 2012</b> 7.85%	<b>27 years 2011</b> 7.64%
<b>10 years 2013</b> 7.32%	<b>10 years 2012</b> 7.86%	<b>10 years 2011</b> 5.37%
<b>5 years 2013</b> 11.89%	<b>5 years 2012</b> 1.52%	<b>5 years 2011</b> 1.22%

## ACTUARIAL

▶ Funded Ratio	53.3%
▶ Date of Last Valuation	01/11
▶ Actuary	PERAC
▶ Assumed Rate of Return	8.00%
▶ Funding Schedule	2.95% Increasing
▶ Year Fully Funded	2028
▶ Unfunded Liability	\$73.5 M
▶ Total Pension Appropriation (Fiscal 2014)	\$9.7 M

	ACTIVE	RETIRED
▶ Number of Members	659	384
▶ Total Payroll/Benefit	\$29.8 M	\$8.3 M
▶ Average Salary/Benefit	\$45,100	\$21,600
▶ Average Age	46	76
▶ Average Service	11.9 years	NA

## 10-YEAR HISTORY OF APPROPRIATIONS (IN THOUSANDS)



## EARNED INCOME OF DISABILITY RETIREES (2012)

▶ Number of Disability Retirees	73
▶ Number Who Reported Earnings	17
▶ Number of Excess Earners	1
▶ Total Amount of Refund Due	\$6,122

▶ 2013 Return	15.14%
▶ 2013 Market Value	\$107.0 M
▶ 2009-2013 (Annualized)	11.89%
▶ 1985-2013 (Annualized)	8.10%

## Chicopee

City Hall, Market Square  
274 Front Street  
Chicopee, MA 01013-2685  
Phone 413-594-1542  
Fax 413-594-1544

### Board Members

Timothy O. O'Shea, (Chairperson),  
Debra A. Boronski, Maxwell S. Mackechnie,  
James R. Montcalm, Sharyn A. Riley

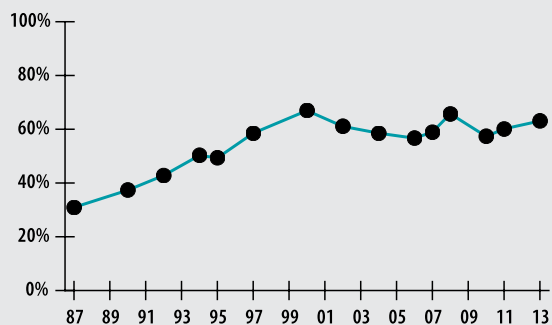
### Board Administrator

Susana Baltazar

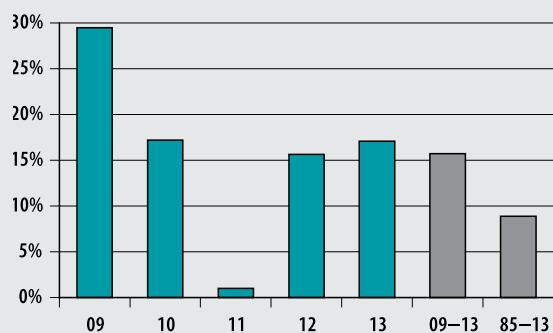
### Board Meeting

Second Thursday of each month at 2:00 pm

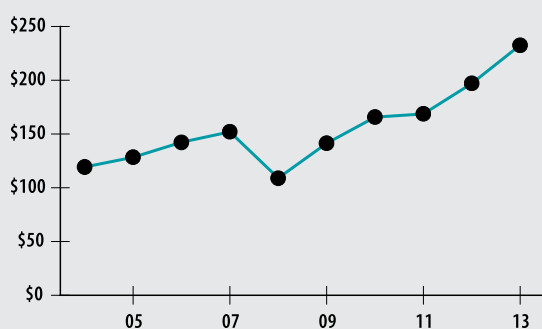
### FUNDED RATIO (1987-2013)



### INVESTMENT RETURN (2009-2013, 5 YEAR AND 29 YEAR AVERAGES)



### ASSET GROWTH (2004-2013) (MARKET VALUE IN MILLIONS)



### INVESTMENT RETURN HISTORY

**29 years 2013**  
8.91%

**28 years 2012**  
8.63%

**27 years 2011**  
8.37%

**10 years 2013**  
7.48%

**10 years 2012**  
7.94%

**10 years 2011**  
5.26%

**5 years 2013**  
15.74%

**5 years 2012**  
4.47%

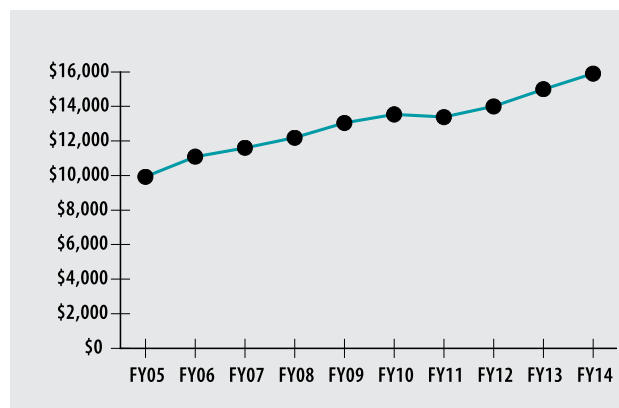
**5 years 2011**  
2.84%

## ACTUARIAL

▶ Funded Ratio	63.1%
▶ Date of Last Valuation	01/13
▶ Actuary	Stone Consulting
▶ Assumed Rate of Return	8.00%
▶ Funding Schedule	2.5% Total Increasing
▶ Year Fully Funded	2023
▶ Unfunded Liability	\$109.1 M
▶ Total Pension Appropriation (Fiscal 2014)	\$15.9 M

	ACTIVE	RETIRED
▶ Number of Members	1,219	781
▶ Total Payroll/Benefit	\$49.9 M	\$16.2 M
▶ Average Salary/Benefit	\$40,900	\$20,800
▶ Average Age	47	73
▶ Average Service	13.1 years	NA

## 10-YEAR HISTORY OF APPROPRIATIONS (IN THOUSANDS)



## EARNED INCOME OF DISABILITY RETIREES (2012)

▶ Number of Disability Retirees	93
▶ Number Who Reported Earnings	25
▶ Number of Excess Earners	1
▶ Total Amount of Refund Due	\$2,978

▶ 2013 Return	17.09%
▶ 2013 Market Value	\$232.4 M
▶ 2009-2013 (Annualized)	15.74%
▶ 1985-2013 (Annualized)	8.91%

**Board Members**

John M. McNamara (Chairperson),  
Joseph P. Casasanto, Paul B. Cherubini,  
George Kittredge, Diane L. Magliozzi

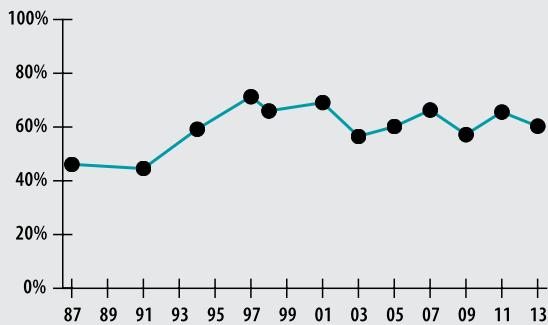
**Board Administrator**

Patricia Hazel

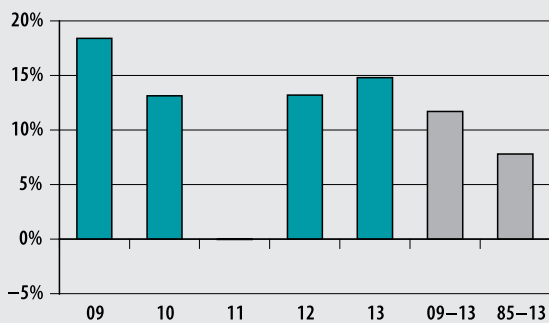
**Board Meeting**

Generally the last Tuesday of each  
month at 4:00 pm

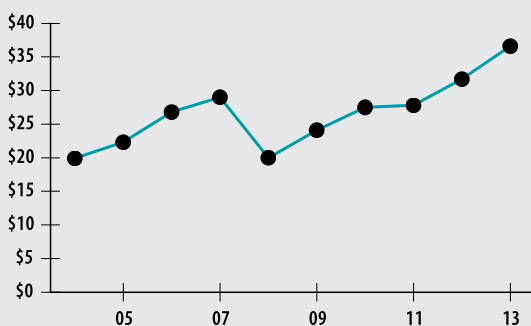
**FUNDED RATIO (1987-2013)**



**INVESTMENT RETURN (2009-2013, 5 YEAR AND 29 YEAR AVERAGES)**



**ASSET GROWTH (2004-2013) (MARKET VALUE IN MILLIONS)**



**INVESTMENT RETURN HISTORY**

**29 years 2013**  
7.82%

**28 years 2012**  
7.57%

**27 years 2011**  
7.37%

**10 years 2013**  
6.39%

**10 years 2012**  
7.32%

**10 years 2011**  
4.81%

**5 years 2013**  
11.73%

**5 years 2012**  
0.63%

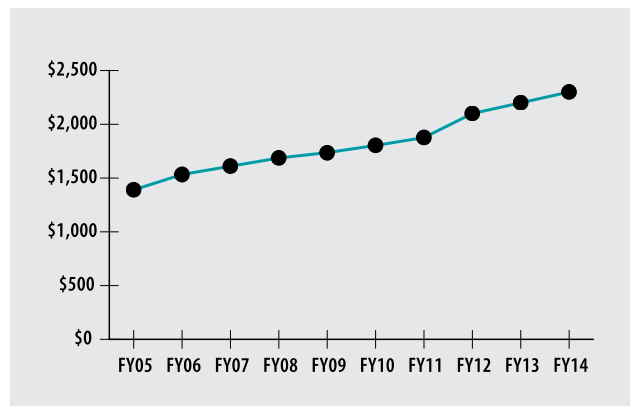
**5 years 2011**  
-0.68%

**ACTUARIAL**

▶ Funded Ratio	60.3%
▶ Date of Last Valuation	01/13
▶ Actuary	PERAC
▶ Assumed Rate of Return	7.75%
▶ Funding Schedule	4.0% Increasing
▶ Year Fully Funded	2034
▶ Unfunded Liability	\$20.6 M
▶ Total Pension Appropriation (Fiscal 2014)	\$2.3 M

	ACTIVE	RETIRED
▶ Number of Members	233	107
▶ Total Payroll/Benefit	\$9.2 M	\$2.4 M
▶ Average Salary/Benefit	\$39,400	\$22,200
▶ Average Age	49	73
▶ Average Service	12.6 years	NA

**10-YEAR HISTORY OF APPROPRIATIONS (IN THOUSANDS)**

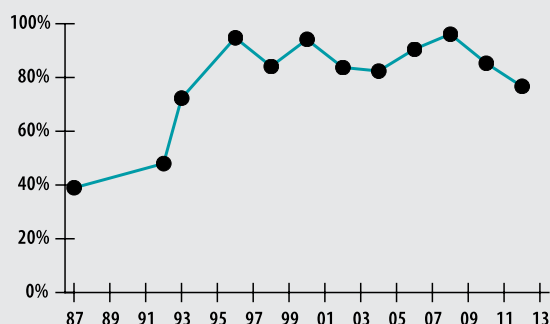


**EARNED INCOME OF DISABILITY RETIREES (2012)**

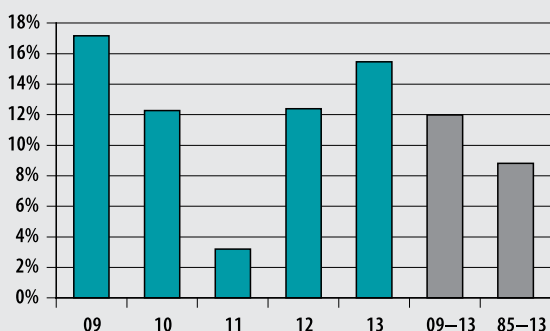
▶ Number of Disability Retirees	13
▶ Number Who Reported Earnings	5
▶ Number of Excess Earners	0
▶ Total Amount of Refund Due	\$0

▶ 2013 Return	14.82%
▶ 2013 Market Value	\$36.6 M
▶ 2009-2013 (Annualized)	11.73%
▶ 1985-2013 (Annualized)	7.82%

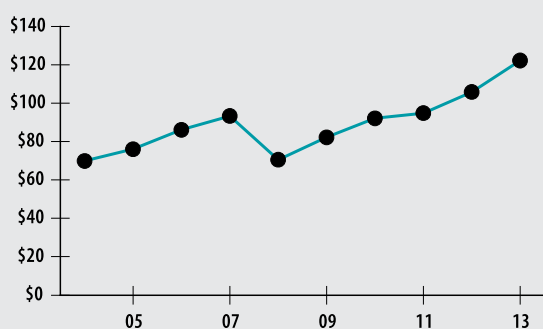
#### FUNDED RATIO (1987-2013)



#### INVESTMENT RETURN (2009-2013, 5 YEAR AND 29 YEAR AVERAGES)



#### ASSET GROWTH (2004-2013) (MARKET VALUE IN MILLIONS)



#### INVESTMENT RETURN HISTORY

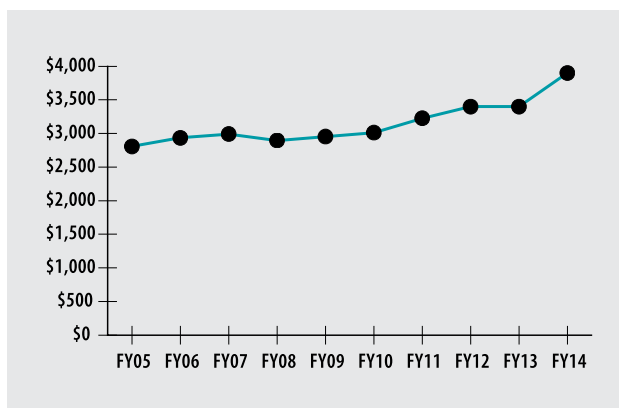
<b>29 years 2013</b> 8.81%	<b>28 years 2012</b> 8.58%	<b>27 years 2011</b> 8.44%
<b>10 years 2013</b> 7.08%	<b>10 years 2012</b> 7.31%	<b>10 years 2011</b> 5.42%
<b>5 years 2013</b> 11.99%	<b>5 years 2012</b> 3.02%	<b>5 years 2011</b> 2.34%

#### ACTUARIAL

▶ Funded Ratio	6.7%
▶ Date of Last Valuation	01/12
▶ Actuary	Stone Consulting
▶ Assumed Rate of Return	7.50%
▶ Funding Schedule	2.0% Increasing
▶ Year Fully Funded	2030
▶ Unfunded Liability	\$28.8 M
▶ Total Pension Appropriation (Fiscal 2014)	\$3.9 M

	ACTIVE	RETIRED
▶ Number of Members	493	260
▶ Total Payroll/Benefit	\$25.2 M	\$5.4 M
▶ Average Salary/Benefit	\$51,200	\$20,700
▶ Average Age	49	74
▶ Average Service	12.0 years	NA

#### 10-YEAR HISTORY OF APPROPRIATIONS (IN THOUSANDS)



#### EARNED INCOME OF DISABILITY RETIREES (2012)

▶ Number of Disability Retirees	24
▶ Number Who Reported Earnings	7
▶ Number of Excess Earners	0
▶ Total Amount of Refund Due	\$0

▶ 2013 Return	15.47%
▶ 2013 Market Value	\$122.2 M
▶ 2009-2013 (Annualized)	11.99%
▶ 1985-2013 (Annualized)	8.81%

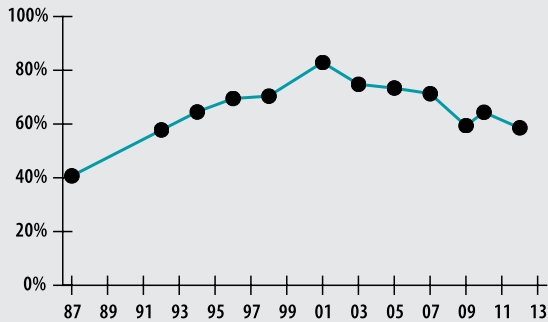
## Danvers

Town Hall  
1 Sylvan Street  
Danvers, MA 01923  
Phone 978-777-0001, Ext. 3044  
Fax 978-762-0264

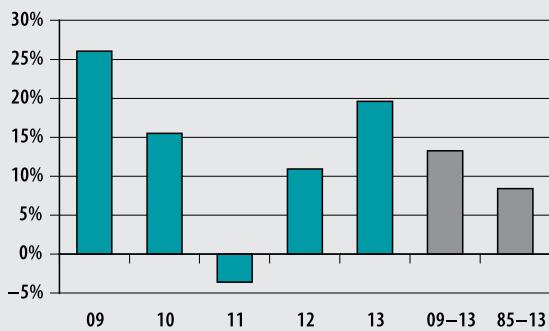
**Board Members**  
Leonard A. Marshall (Chairperson),  
Robert J. Cyr, Dana M. Hagan,  
Wayne P. Marquis

**Board Administrator**  
Susan Little  
**Board Meeting**  
Last Wednesday of each month at 3:00 pm

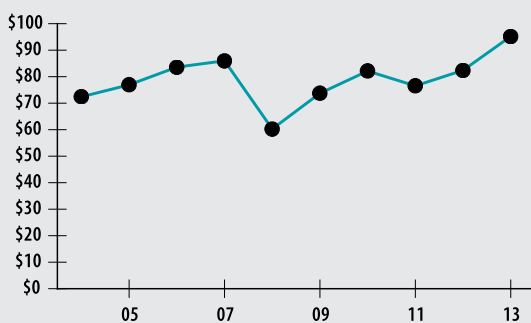
### FUNDED RATIO (1987-2013)



### INVESTMENT RETURN (2009-2013, 5 YEAR AND 29 YEAR AVERAGES)



### ASSET GROWTH (2004-2013) (MARKET VALUE IN MILLIONS)



### INVESTMENT RETURN HISTORY

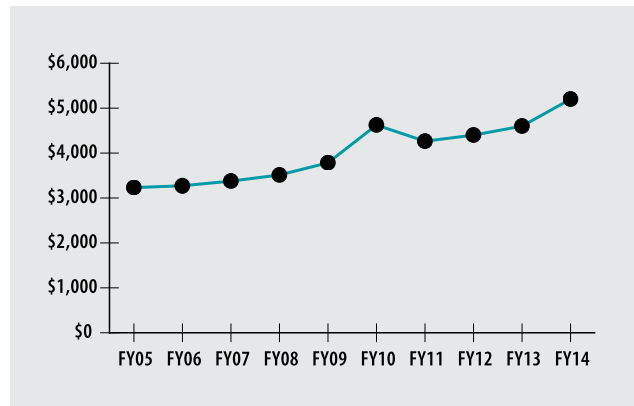
<b>29 years 2013</b> 8.41%	<b>28 years 2012</b> 8.03%	<b>27 years 2011</b> 7.93%
<b>10 years 2013</b> 6.63%	<b>10 years 2012</b> 6.22%	<b>10 years 2011</b> 4.27%
<b>5 years 2013</b> 13.26%	<b>5 years 2012</b> 2.57%	<b>5 years 2011</b> 1.59%

## ACTUARIAL

▶ Funded Ratio	58.6%
▶ Date of Last Valuation	01/12
▶ Actuary	Stone Consulting
▶ Assumed Rate of Return	8.00%
▶ Funding Schedule	4.0% Increasing
▶ Year Fully Funded	2036
▶ Unfunded Liability	\$59.3 M
▶ Total Pension Appropriation (Fiscal 2014)	\$5.2 M

	ACTIVE	RETIRED
▶ Number of Members	440	386
▶ Total Payroll/Benefit	\$22.9 M	\$8.4 M
▶ Average Salary/Benefit	\$52,100	\$21,800
▶ Average Age	48	75
▶ Average Service	13.7 years	NA

## 10-YEAR HISTORY OF APPROPRIATIONS (IN THOUSANDS)



## EARNED INCOME OF DISABILITY RETIREES (2012)

▶ Number of Disability Retirees	25
▶ Number Who Reported Earnings	6
▶ Number of Excess Earners	0
▶ Total Amount of Refund Due	\$0

▶ 2013 Return	19.63%
▶ 2013 Market Value	\$95.1 M
▶ 2009-2013 (Annualized)	13.26%
▶ 1985-2013 (Annualized)	8.41%

**Board Members**

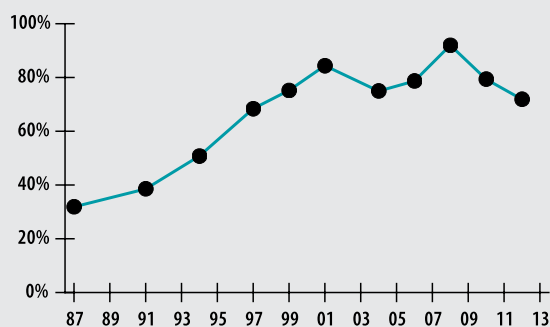
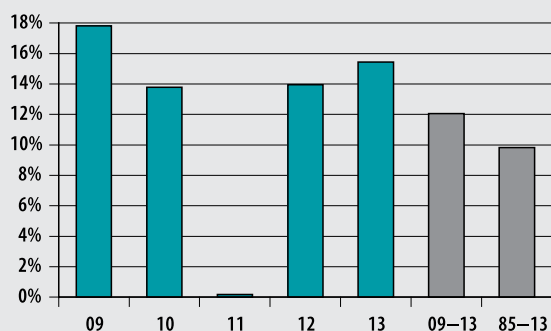
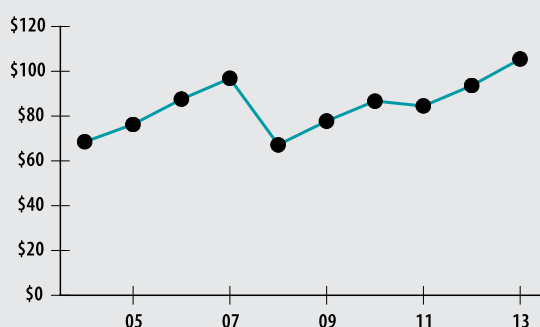
Thomas R. Rorrie (Chairperson),  
John W. Fontaine, Jr.,  
Stephen M. MacDougall, John Maloney,  
Susan Shaw

**Board Administrator**

Lynn M. Carley

**Board Meeting**

Third Wednesday of each month

**FUNDED RATIO (1987-2013)**

**INVESTMENT RETURN (2009-2013, 5 YEAR AND 29 YEAR AVERAGES)**

**ASSET GROWTH (2004-2013) (MARKET VALUE IN MILLIONS)**

**INVESTMENT RETURN HISTORY**
**29 years 2013**

9.82%

**28 years 2012**

9.62%

**27 years 2011**

9.46%

**10 years 2013**

7.74%

**10 years 2012**

8.68%

**10 years 2011**

6.26%

**5 years 2013**

12.06%

**5 years 2012**

1.55%

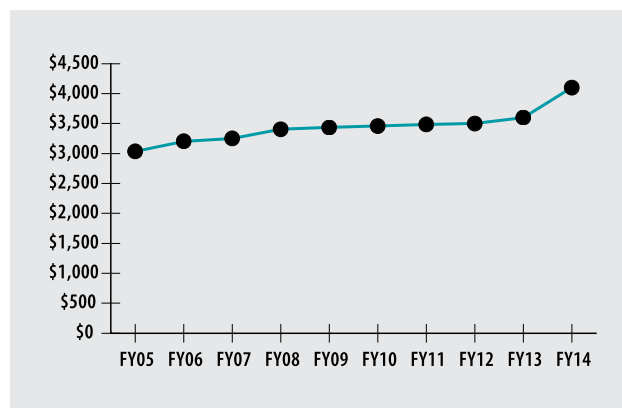
**5 years 2011**

1.22%

**ACTUARIAL**

▶ Funded Ratio	71.9%
▶ Date of Last Valuation	01/12
▶ Actuary	PERAC
▶ Assumed Rate of Return	8.00%
▶ Funding Schedule	4.0% Increasing Phase-in
▶ Year Fully Funded	2034
▶ Unfunded Liability	\$33.8 M
▶ Total Pension Appropriation (Fiscal 2014)	\$4.1 M

	ACTIVE	RETIRED
▶ Number of Members	452	297
▶ Total Payroll/Benefit	\$20.7 M	\$7.0 M
▶ Average Salary/Benefit	\$45,900	\$23,500
▶ Average Age	47	74
▶ Average Service	11.6 years	NA

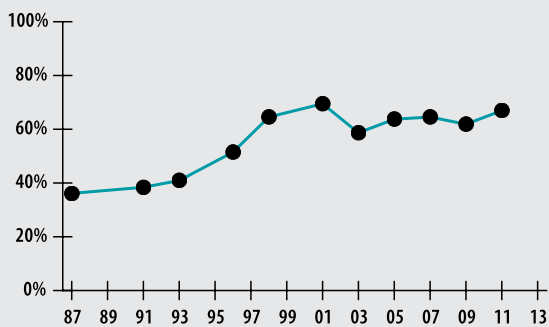
**10-YEAR HISTORY OF APPROPRIATIONS (IN THOUSANDS)**

**EARNED INCOME OF DISABILITY RETIREES (2012)**

▶ Number of Disability Retirees	52
▶ Number Who Reported Earnings	5
▶ Number of Excess Earners	0
▶ Total Amount of Refund Due	\$0

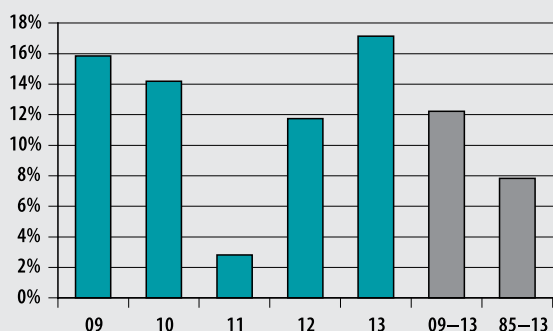
▶ 2013 Return	15.45%
▶ 2013 Market Value	\$105.4 M
▶ 2009-2013 (Annualized)	12.06%
▶ 1985-2013 (Annualized)	9.82%



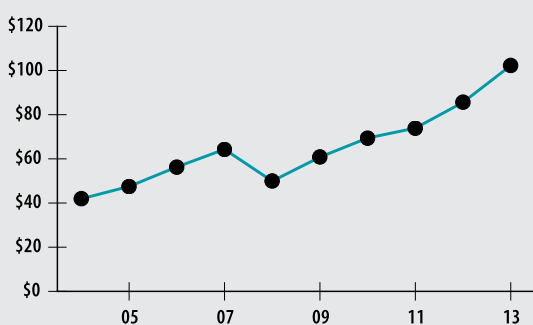
#### FUNDED RATIO (1987-2013)



#### INVESTMENT RETURN (2009-2013, 5 YEAR AND 29 YEAR AVERAGES)



#### ASSET GROWTH (2004-2013) (MARKET VALUE IN MILLIONS)



#### INVESTMENT RETURN HISTORY

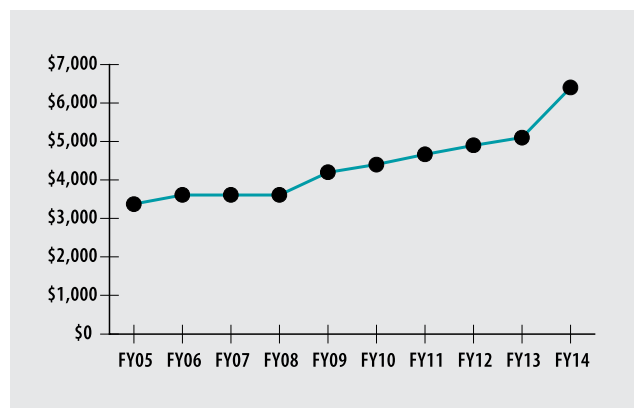
<b>29 years 2013</b> 7.84%	<b>28 years 2012</b> 7.52%	<b>27 years 2011</b> 7.36%
<b>10 years 2013</b> 7.41%	<b>10 years 2012</b> 7.36%	<b>10 years 2011</b> 5.52%
<b>5 years 2013</b> 12.23%	<b>5 years 2012</b> 2.97%	<b>5 years 2011</b> 2.91%

#### ACTUARIAL

▶ Funded Ratio	67.0%
▶ Date of Last Valuation	01/11
▶ Actuary	Buck Consultants
▶ Assumed Rate of Return	8.00%
▶ Funding Schedule	4.5% Increasing
▶ Year Fully Funded	2026
▶ Unfunded Liability	\$36.4 M
▶ Total Pension Appropriation (Fiscal 2014)	\$6.4 M

	ACTIVE	RETIRED
▶ Number of Members	602	236
▶ Total Payroll/Benefit	\$29.1 M	\$4.6 M
▶ Average Salary/Benefit	\$48,400	\$19,400
▶ Average Age	49	NA
▶ Average Service	10.2 years	NA

#### 10-YEAR HISTORY OF APPROPRIATIONS (IN THOUSANDS)



#### EARNED INCOME OF DISABILITY RETIREES (2012)

▶ Number of Disability Retirees	22
▶ Number Who Reported Earnings	12
▶ Number of Excess Earners	2
▶ Total Amount of Refund Due	\$5,752

▶ 2013 Return	17.14%
▶ 2013 Market Value	\$102.2 M
▶ 2009-2013 (Annualized)	12.23%
▶ 1985-2013 (Annualized)	7.84%

**Board Members**

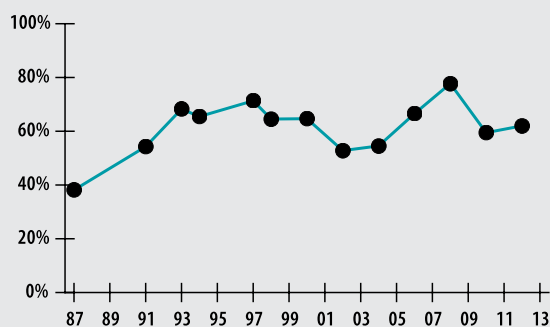
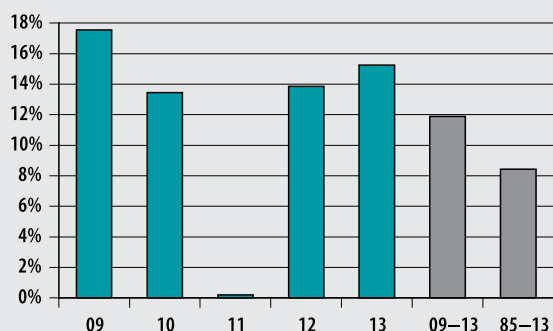
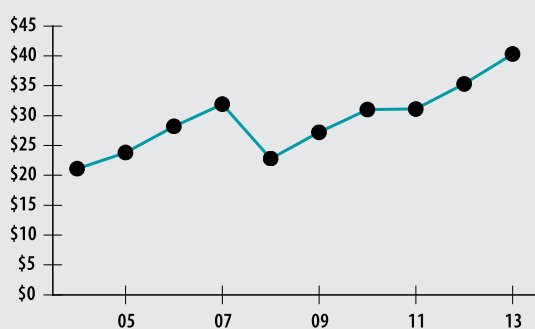
James P. Dunham (Chairperson),  
Valerie J. Bernier, Donald C. Emerson,  
William F. Steplar, Melissa Zawadzki

**Board Administrator**

Tina Schneider

**Board Meeting**

Fourth Tuesday of each month

**FUNDED RATIO (1987-2013)**

**INVESTMENT RETURN (2009-2013, 5 YEAR AND 29 YEAR AVERAGES)**

**ASSET GROWTH (2004-2013) (MARKET VALUE IN MILLIONS)**

**INVESTMENT RETURN HISTORY**
**29 years 2013**

8.44%

**28 years 2012**

8.21%

**27 years 2011**

8.00%

**10 years 2013**

7.68%

**10 years 2012**

8.66%

**10 years 2011**

6.29%

**5 years 2013**

11.89%

**5 years 2012**

1.47%

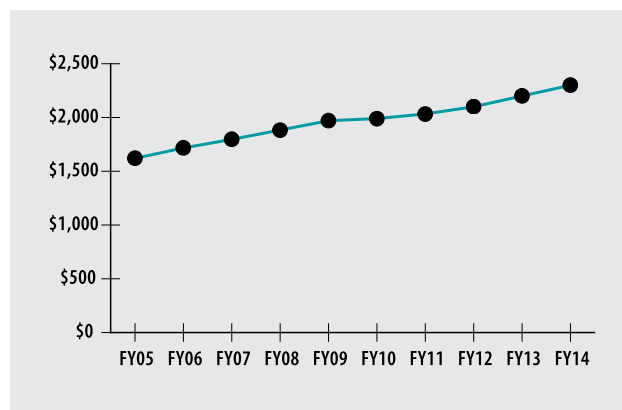
**5 years 2011**

1.15%

**ACTUARIAL**

▶ Funded Ratio	62.0%
▶ Date of Last Valuation	01/12
▶ Actuary	PERAC
▶ Assumed Rate of Return	8.00%
▶ Funding Schedule	4.0% Increasing
▶ Year Fully Funded	2033
▶ Unfunded Liability	\$19.0 M
▶ Total Pension Appropriation (Fiscal 2014)	\$2.3 M

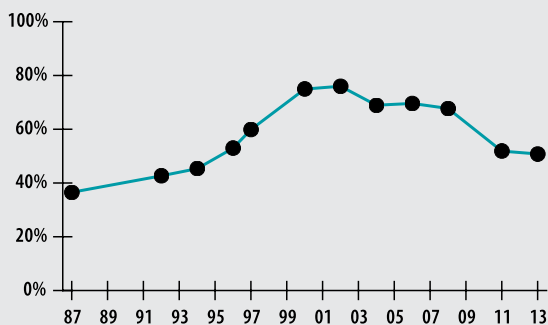
	ACTIVE	RETIRED
▶ Number of Members	221	143
▶ Total Payroll/Benefit	\$8.9 M	\$2.6 M
▶ Average Salary/Benefit	\$40,500	\$17,900
▶ Average Age	48	71
▶ Average Service	12.4 years	NA

**10-YEAR HISTORY OF APPROPRIATIONS (IN THOUSANDS)**

**EARNED INCOME OF DISABILITY RETIREES (2012)**

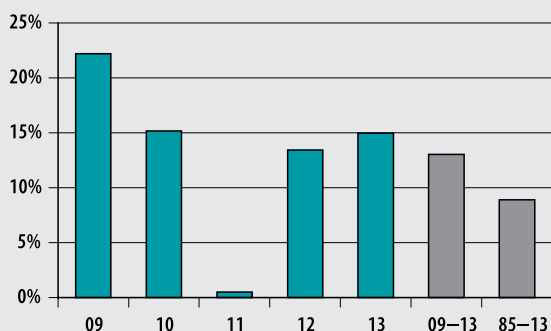
▶ Number of Disability Retirees	18
▶ Number Who Reported Earnings	2
▶ Number of Excess Earners	0
▶ Total Amount of Refund Due	\$0

▶ 2013 Return	15.25%
▶ 2013 Market Value	\$40.3 M
▶ 2009-2013 (Annualized)	11.89%
▶ 1985-2013 (Annualized)	8.44%

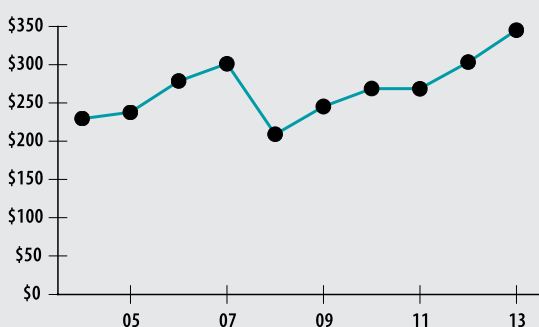
#### FUNDED RATIO (1987-2013)



#### INVESTMENT RETURN (2009-2013, 5 YEAR AND 29 YEAR AVERAGES)



#### ASSET GROWTH (2004-2013) (MARKET VALUE IN MILLIONS)



#### INVESTMENT RETURN HISTORY

**29 years 2013**  
8.93%

**28 years 2012**  
8.72%

**27 years 2011**  
8.54%

**10 years 2013**  
6.26%

**10 years 2012**  
6.64%

**10 years 2011**  
4.38%

**5 years 2013**  
13.04%

**5 years 2012**  
1.45%

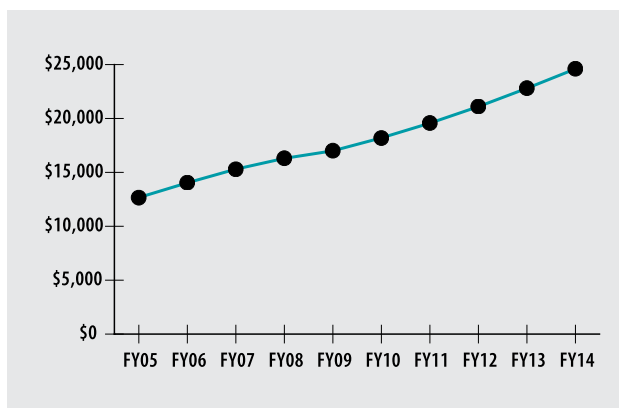
**5 years 2011**  
0.80%

#### ACTUARIAL

▶ Funded Ratio	50.8%
▶ Date of Last Valuation	01/13
▶ Actuary	Stone Consulting
▶ Assumed Rate of Return	8.00%
▶ Funding Schedule	Varies Total Increasing
▶ Year Fully Funded	2035
▶ Unfunded Liability	\$304.8 M
▶ Total Pension Appropriation (Fiscal 2014)	\$24.6 M

	ACTIVE	RETIRED
▶ Number of Members	2,816	1,670
▶ Total Payroll/Benefit	\$119.3 M	\$33.5 M
▶ Average Salary/Benefit	\$42,400	\$20,100
▶ Average Age	49	73
▶ Average Service	10.9 years	NA

#### 10-YEAR HISTORY OF APPROPRIATIONS (IN THOUSANDS)

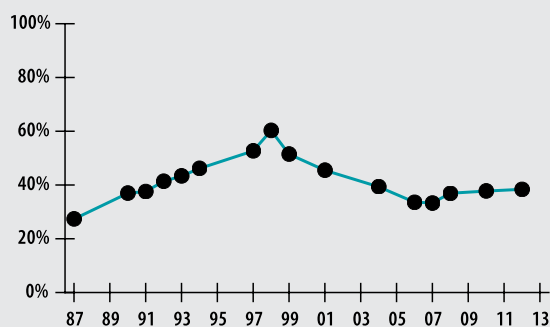


#### EARNED INCOME OF DISABILITY RETIREES (2012)

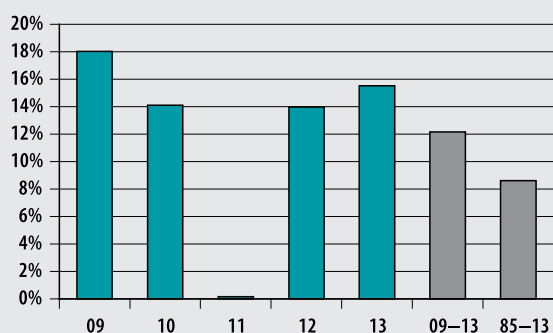
▶ Number of Disability Retirees	122
▶ Number Who Reported Earnings	36
▶ Number of Excess Earners	2
▶ Total Amount of Refund Due	\$7,641

▶ 2013 Return	14.97%
▶ 2013 Market Value	\$345.0 M
▶ 2009-2013 (Annualized)	13.04%
▶ 1985-2013 (Annualized)	8.93%

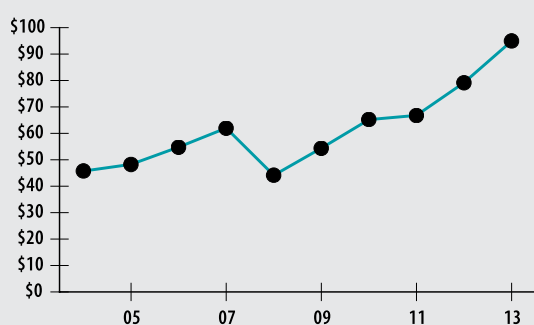
### FUNDED RATIO (1987-2013)



### INVESTMENT RETURN (2009-2013, 5 YEAR AND 29 YEAR AVERAGES)



### ASSET GROWTH (2004-2013) (MARKET VALUE IN MILLIONS)



### INVESTMENT RETURN HISTORY

**29 years 2013**  
8.63%

**28 years 2012**  
8.40%

**27 years 2011**  
8.19%

**10 years 2013**  
6.96%

**10 years 2012**  
7.46%

**10 years 2011**  
4.70%

**5 years 2013**  
12.18%

**5 years 2012**  
1.57%

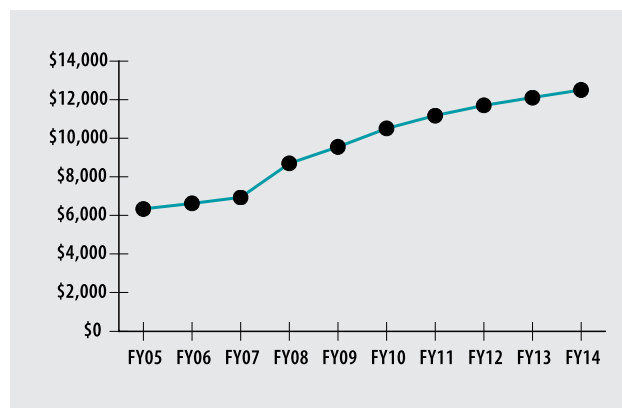
**5 years 2011**  
1.19%

### ACTUARIAL

▶ Funded Ratio	38.4%
▶ Date of Last Valuation	01/12
▶ Actuary	PERAC
▶ Assumed Rate of Return	8.00%
▶ Funding Schedule	3.7% Increasing
▶ Year Fully Funded	2030
▶ Unfunded Liability	\$115.7 M
▶ Total Pension Appropriation (Fiscal 2014)	\$12.5 M

	ACTIVE	RETIRED
▶ Number of Members	649	544
▶ Total Payroll/Benefit	\$31.6 M	\$11.4 M
▶ Average Salary/Benefit	\$48,600	\$21,000
▶ Average Age	47	76
▶ Average Service	11.5 years	NA

### 10-YEAR HISTORY OF APPROPRIATIONS (IN THOUSANDS)

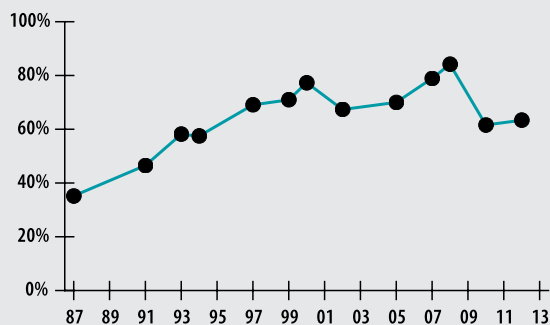


### EARNED INCOME OF DISABILITY RETIREES (2012)

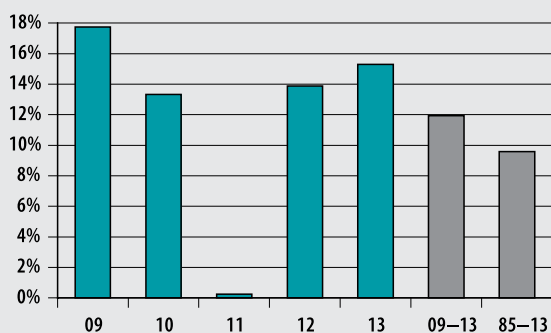
▶ Number of Disability Retirees	86
▶ Number Who Reported Earnings	21
▶ Number of Excess Earners	1
▶ Total Amount of Refund Due	\$15,038

▶ 2013 Return	15.52%
▶ 2013 Market Value	\$94.9 M
▶ 2009-2013 (Annualized)	12.18%
▶ 1985-2013 (Annualized)	8.63%

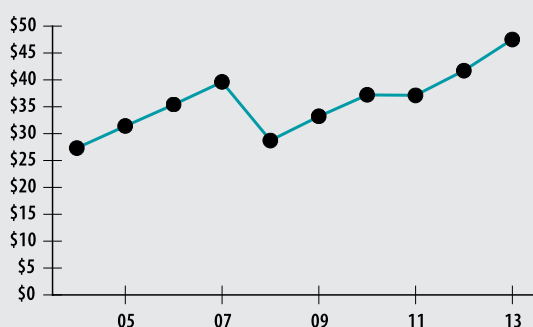
### FUNDED RATIO (1987-2013)



### INVESTMENT RETURN (2009-2013, 5 YEAR AND 29 YEAR AVERAGES)



### ASSET GROWTH (2004-2013) (MARKET VALUE IN MILLIONS)



### INVESTMENT RETURN HISTORY

**29 years 2013**  
9.58%

**28 years 2012**  
9.38%

**27 years 2011**  
9.22%

**10 years 2013**  
7.64%

**10 years 2012**  
8.57%

**10 years 2011**  
6.21%

**5 years 2013**  
11.93%

**5 years 2012**  
1.47%

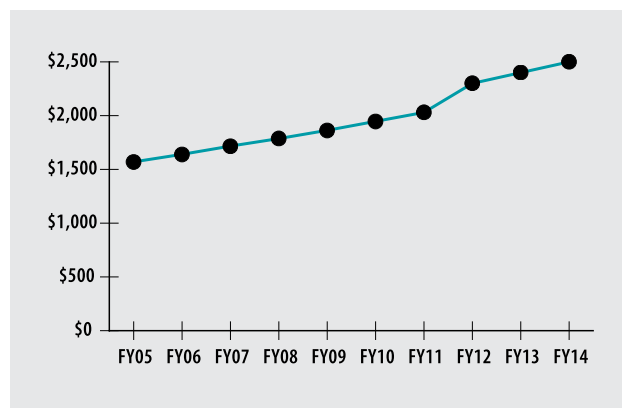
**5 years 2011**  
1.12%

## ACTUARIAL

▶ Funded Ratio	63.4%
▶ Date of Last Valuation	01/12
▶ Actuary	PERAC
▶ Assumed Rate of Return	8.00%
▶ Funding Schedule	4.0% Increasing
▶ Year Fully Funded	2032
▶ Unfunded Liability	\$21.5 M
▶ Total Pension Appropriation (Fiscal 2014)	\$2.5 M

	ACTIVE	RETIRED
▶ Number of Members	255	175
▶ Total Payroll/Benefit	\$10.4 M	\$3.1 M
▶ Average Salary/Benefit	\$40,900	\$17,600
▶ Average Age	48	72
▶ Average Service	13.0 years	NA

## 10-YEAR HISTORY OF APPROPRIATIONS (IN THOUSANDS)



## EARNED INCOME OF DISABILITY RETIREES (2012)

▶ Number of Disability Retirees	23
▶ Number Who Reported Earnings	12
▶ Number of Excess Earners	0
▶ Total Amount of Refund Due	\$0

▶ 2013 Return	15.30%
▶ 2013 Market Value	\$47.5 M
▶ 2009-2013 (Annualized)	11.93%
▶ 1985-2013 (Annualized)	9.58%

## Fall River

30 Third Street  
Suite 301  
Fall River, MA 02720  
Phone 508-646-9120  
Fax 508-646-9123

### Board Members

Arthur Viana (Chairperson),  
Michael J. Coogan, Krishan Gupta,  
David Machado, Mark Nassiff, Jr.

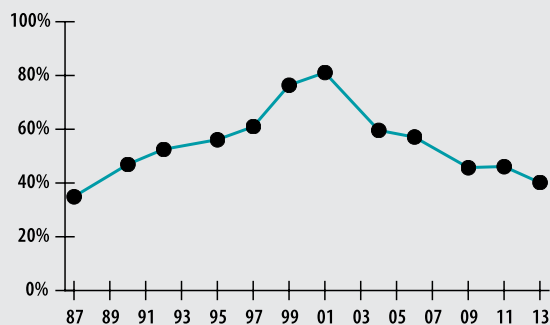
### Board Administrator

Christine Tetreault

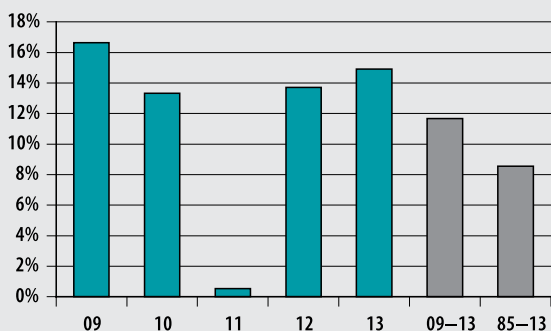
### Board Meeting

Varies

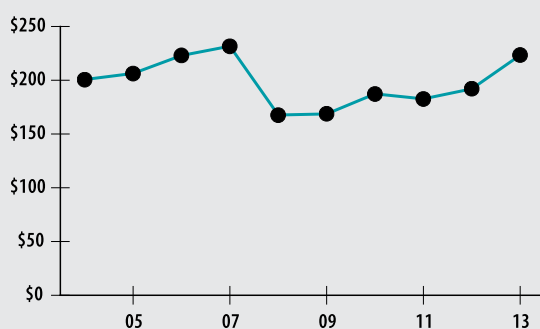
### FUNDED RATIO (1987-2013)



### INVESTMENT RETURN (2009-2013, 5 YEAR AND 29 YEAR AVERAGES)



### ASSET GROWTH (2004-2013) (MARKET VALUE IN MILLIONS)



### INVESTMENT RETURN HISTORY

#### 29 years 2013

8.56%

#### 28 years 2012

8.34%

#### 27 years 2011

8.14%

#### 10 years 2013

5.84%

#### 10 years 2012

6.13%

#### 10 years 2011

3.46%

#### 5 years 2013

11.67%

#### 5 years 2012

1.83%

#### 5 years 2011

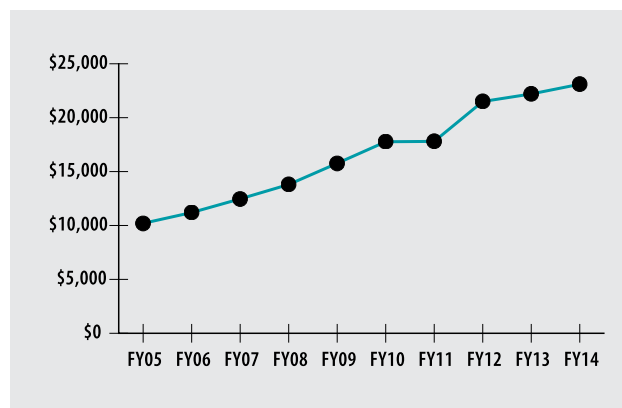
0.68%

## ACTUARIAL

▶ Funded Ratio	40.2%
▶ Date of Last Valuation	01/13
▶ Actuary	PERAC
▶ Assumed Rate of Return	7.75%
▶ Funding Schedule	6.0% Total Increasing
▶ Year Fully Funded	2036
▶ Unfunded Liability	\$312.3 M
▶ Total Pension Appropriation (Fiscal 2014)	\$23.1 M

	ACTIVE	RETIRED
▶ Number of Members	1,627	1,531
▶ Total Payroll/Benefit	\$72.0 M	\$32.6 M
▶ Average Salary/Benefit	\$44,200	\$21,300
▶ Average Age	46	73
▶ Average Service	13.5 years	NA

## 10-YEAR HISTORY OF APPROPRIATIONS (IN THOUSANDS)

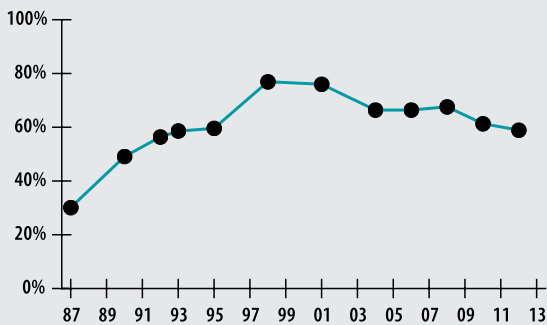


## EARNED INCOME OF DISABILITY RETIREES (2012)

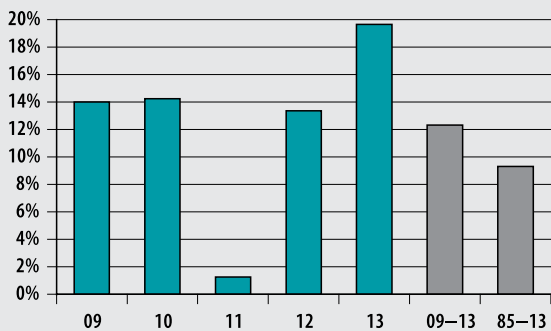
▶ Number of Disability Retirees	250
▶ Number Who Reported Earnings	56
▶ Number of Excess Earners	3
▶ Total Amount of Refund Due	\$41,614

▶ 2013 Return	14.91%
▶ 2013 Market Value	\$223.3 M
▶ 2009-2013 (Annualized)	11.67%
▶ 1985-2013 (Annualized)	8.56%

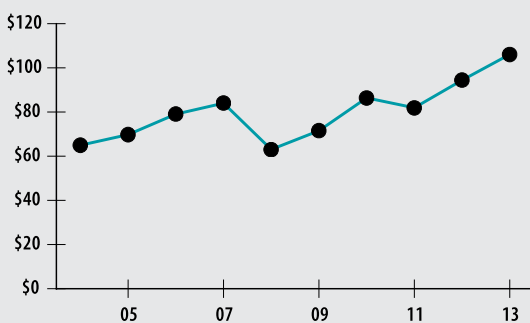
**FUNDED RATIO (1987-2013)**



**INVESTMENT RETURN (2009-2013, 5 YEAR AND 29 YEAR AVERAGES)**



**ASSET GROWTH (2004-2013) (MARKET VALUE IN MILLIONS)**



**INVESTMENT RETURN HISTORY**

<b>29 years 2013</b> 9.31%	<b>28 years 2012</b> 8.96%	<b>27 years 2011</b> 8.80%
<b>10 years 2013</b> 6.95%	<b>10 years 2012</b> 7.06%	<b>10 years 2011</b> 4.45%
<b>5 years 2013</b> 12.34%	<b>5 years 2012</b> 2.44%	<b>5 years 2011</b> 1.28%

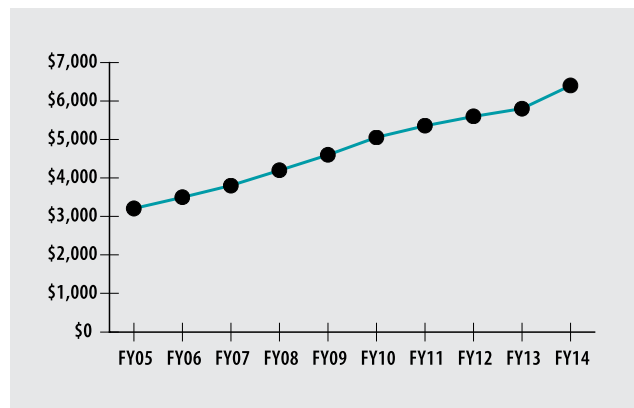
**ACTUARIAL**

▶ Funded Ratio	58.9%
▶ Date of Last Valuation	01/12
▶ Actuary	PERAC
▶ Assumed Rate of Return	8.00%
▶ Funding Schedule	4.0% Increasing
▶ Year Fully Funded	2037
▶ Unfunded Liability	\$62.9 M
▶ Total Pension Appropriation (Fiscal 2014)	\$6.4 M

	<b>ACTIVE</b>	<b>RETIRED</b>
▶ Number of Members	577	343
▶ Total Payroll/Benefit	\$26.7 M	\$7.9 M
▶ Average Salary/Benefit	\$46,200	\$23,000
▶ Average Age	50	72
▶ Average Service	12.8 years	NA

**10-YEAR HISTORY OF APPROPRIATIONS (IN THOUSANDS)**



**EARNED INCOME OF DISABILITY RETIREES (2012)**

▶ Number of Disability Retirees	42
▶ Number Who Reported Earnings	15
▶ Number of Excess Earners	0
▶ Total Amount of Refund Due	\$0

▶ 2013 Return	19.67%
▶ 2013 Market Value	\$106.0 M
▶ 2009-2013 (Annualized)	12.34%
▶ 1985-2013 (Annualized)	9.31%



**Board Members**

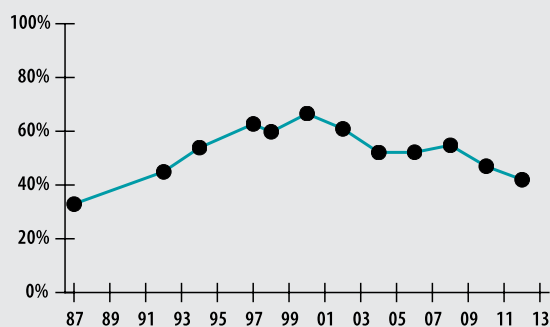
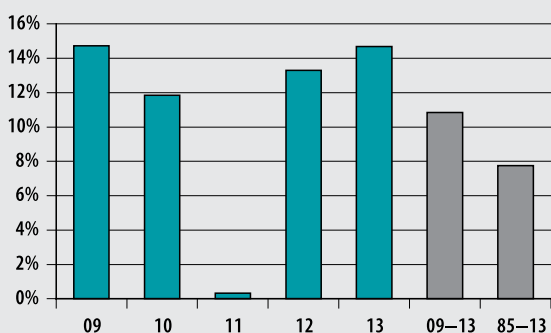
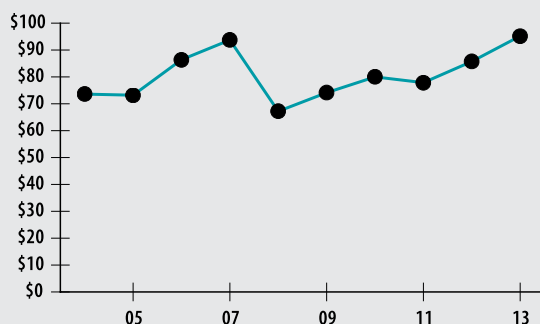
Richard N. Sarasin (Chairperson),  
John C. Curran, Thomas A. Dateo, Jr.,  
Ellen M. Jerszyk, Norman J. LeBlanc

**Board Administrator**

Diane G. Vieweg

**Board Meeting**

Fourth Tuesday of each month at 10:00 am

**FUNDED RATIO (1987-2013)**

**INVESTMENT RETURN (2009-2013, 5 YEAR AND 29 YEAR AVERAGES)**

**ASSET GROWTH (2004-2013) (MARKET VALUE IN MILLIONS)**

**INVESTMENT RETURN HISTORY**

**29 years 2013**  
7.75%

**28 years 2012**  
7.51%

**27 years 2011**  
7.30%

**10 years 2013**  
5.62%

**10 years 2012**  
5.87%

**10 years 2011**  
3.50%

**5 years 2013**  
10.84%

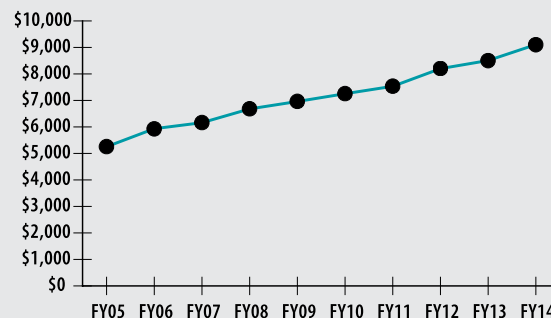
**5 years 2012**  
1.25%

**5 years 2011**  
0.63%

**ACTUARIAL**

▶ Funded Ratio	42.0%
▶ Date of Last Valuation	01/12
▶ Actuary	Stone Consulting
▶ Assumed Rate of Return	7.95%
▶ Funding Schedule	4.0% Increasing
▶ Year Fully Funded	2035
▶ Unfunded Liability	\$112.4 M
▶ Total Pension Appropriation (Fiscal 2014)	\$9.1 M

	ACTIVE	RETIRED
▶ Number of Members	613	540
▶ Total Payroll/Benefit	\$27.0 M	\$12.1 M
▶ Average Salary/Benefit	\$44,100	\$22,500
▶ Average Age	48	NA
▶ Average Service	12.7 years	NA

**10-YEAR HISTORY OF APPROPRIATIONS (IN THOUSANDS)**

**EARNED INCOME OF DISABILITY RETIREES (2012)**

▶ Number of Disability Retirees	60
▶ Number Who Reported Earnings	7
▶ Number of Excess Earners	0
▶ Total Amount of Refund Due	\$0

▶ 2013 Return	14.68%
▶ 2013 Market Value	\$95.1 M
▶ 2009-2013 (Annualized)	10.84%
▶ 1985-2013 (Annualized)	7.75%

**Board Members**

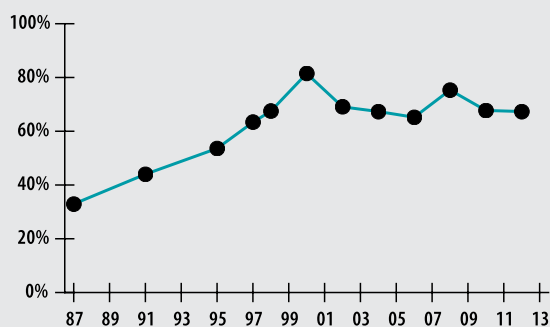
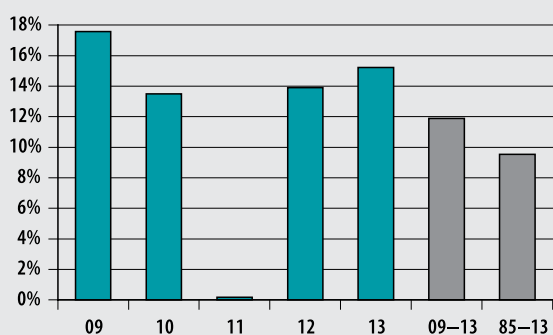
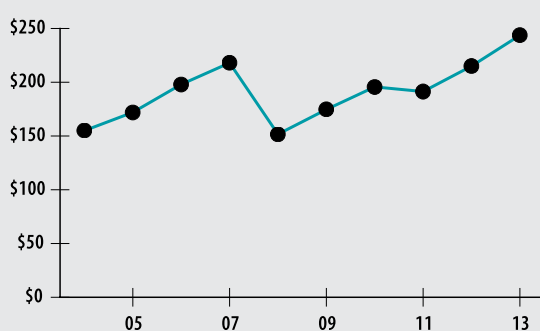
Richard C. Howarth, Jr. (Chairperson),  
Paul F. Barbieri, Mary Ellen Kelley,  
Wayne MacDonald, Peter J. Rovinelli

**Board Administrator**

Laurie A. Lizak

**Board Meeting**

Varies

**FUNDED RATIO (1987-2013)**

**INVESTMENT RETURN (2009-2013, 5 YEAR AND 29 YEAR AVERAGES)**

**ASSET GROWTH (2004-2013) (MARKET VALUE IN MILLIONS)**

**INVESTMENT RETURN HISTORY**
**29 years 2013**

9.55%

**28 years 2012**

9.35%

**27 years 2011**

9.19%

**10 years 2013**

7.68%

**10 years 2012**

8.67%

**10 years 2011**

6.00%

**5 years 2013**

11.90%

**5 years 2012**

1.48%

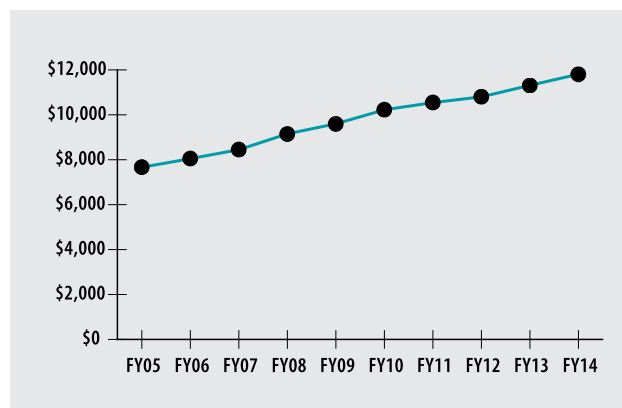
**5 years 2011**

1.16%

**ACTUARIAL**

▶ Funded Ratio	67.3%
▶ Date of Last Valuation	01/12
▶ Actuary	PERAC
▶ Assumed Rate of Return	8.00%
▶ Funding Schedule	5.0% Total Increasing
▶ Year Fully Funded	2030
▶ Unfunded Liability	\$101.4 M
▶ Total Pension Appropriation (Fiscal 2014)	\$11.8 M

	ACTIVE	RETIRED
▶ Number of Members	1,072	809
▶ Total Payroll/Benefit	\$51.9 M	\$18.0 M
▶ Average Salary/Benefit	\$48,400	\$22,200
▶ Average Age	47	74
▶ Average Service	12.5 years	NA

**10-YEAR HISTORY OF APPROPRIATIONS (IN THOUSANDS)**

**EARNED INCOME OF DISABILITY RETIREES (2012)**

▶ Number of Disability Retirees	77
▶ Number Who Reported Earnings	20
▶ Number of Excess Earners	0
▶ Total Amount of Refund Due	\$0

▶ 2013 Return	15.22%
▶ 2013 Market Value	\$243.7 M
▶ 2009-2013 (Annualized)	11.90%
▶ 1985-2013 (Annualized)	9.55%

## Board Members

Sandra A. Hanks (Chairperson),  
David Gendron, Paula Light, Paul Mokrzecki,  
Mary A. Stokarski

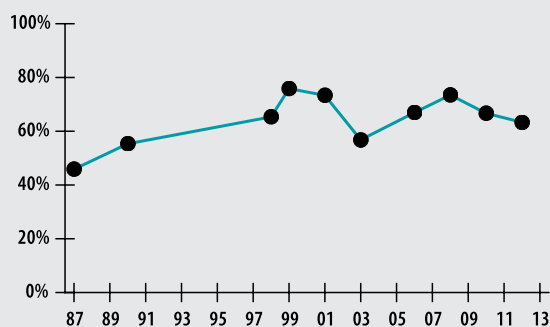
## Board Administrator

Dale Kowacki

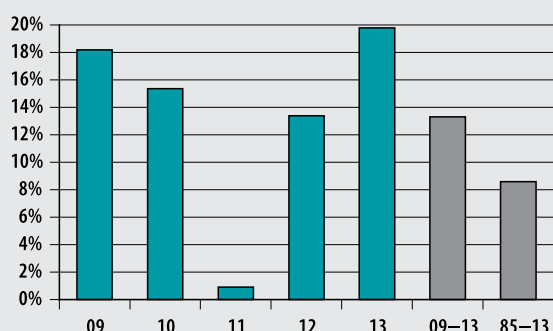
## Board Meeting

Usually meets the last Wednesday  
of each month

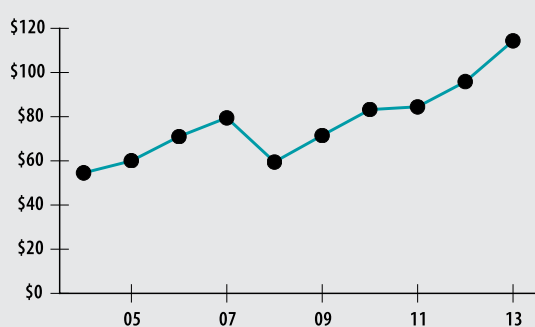
## FUNDED RATIO (1987-2013)



## INVESTMENT RETURN (2009-2013, 5 YEAR AND 29 YEAR AVERAGES)



## ASSET GROWTH (2004-2013) (MARKET VALUE IN MILLIONS)



## INVESTMENT RETURN HISTORY

**29 years 2013**  
8.59%

**28 years 2012**  
8.21%

**27 years 2011**  
8.02%

**10 years 2013**  
7.28%

**10 years 2012**  
7.04%

**10 years 2011**  
4.78%

**5 years 2013**  
13.33%

**5 years 2012**  
2.69%

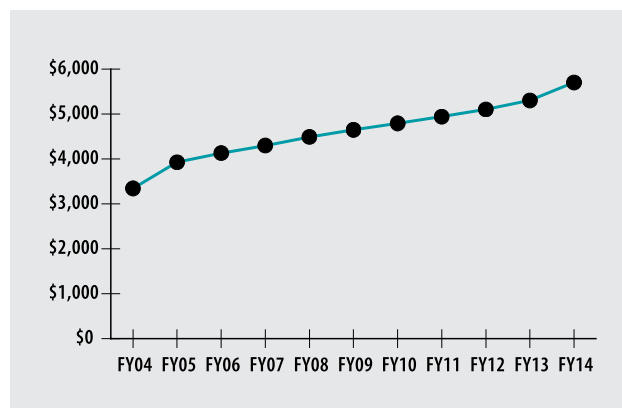
**5 years 2011**  
2.28%

## ACTUARIAL

▶ Funded Ratio	63.3%
▶ Date of Last Valuation	01/12
▶ Actuary	Stone Consulting
▶ Assumed Rate of Return	7.88%
▶ Funding Schedule	4.0% Increasing
▶ Year Fully Funded	2035
▶ Unfunded Liability	\$49.7 M
▶ Total Pension Appropriation (Fiscal 2014)	\$5.7 M

	ACTIVE	RETIRED
▶ Number of Members	929	476
▶ Total Payroll/Benefit	\$30.0 M	\$6.2 M
▶ Average Salary/Benefit	\$32,300	\$12,900
▶ Average Age	49	72
▶ Average Service	10.9 years	NA

## 10-YEAR HISTORY OF APPROPRIATIONS (IN THOUSANDS)

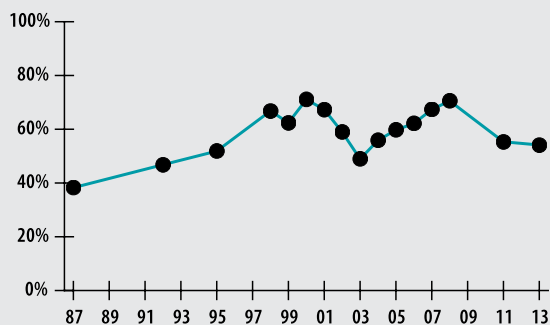


## EARNED INCOME OF DISABILITY RETIREES (2012)

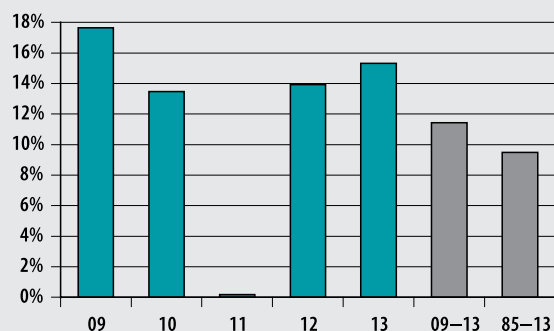
▶ Number of Disability Retirees	19
▶ Number Who Reported Earnings	6
▶ Number of Excess Earners	1
▶ Total Amount of Refund Due	\$5,158

▶ 2013 Return	19.80%
▶ 2013 Market Value	\$114.3 M
▶ 2009-2013 (Annualized)	13.33%
▶ 1985-2013 (Annualized)	8.59%

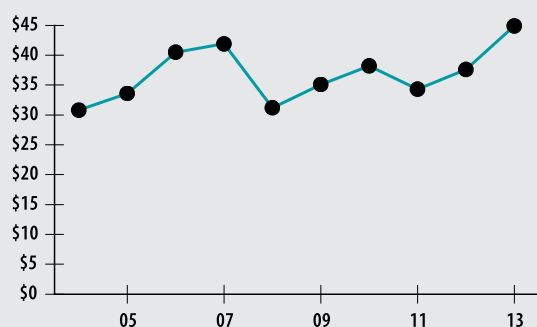
### FUNDED RATIO (1987-2013)



### INVESTMENT RETURN (2009-2013, 5 YEAR AND 29 YEAR AVERAGES)



### ASSET GROWTH (2004-2013) (MARKET VALUE IN MILLIONS)



### INVESTMENT RETURN HISTORY

**29 years 2013**  
9.68%

**28 years 2012**  
9.49%

**27 years 2011**  
9.33%

**10 years 2013**  
7.66%

**10 years 2012**  
8.64%

**10 years 2011**  
6.24%

**5 years 2013**  
11.93%

**5 years 2012**  
1.43%

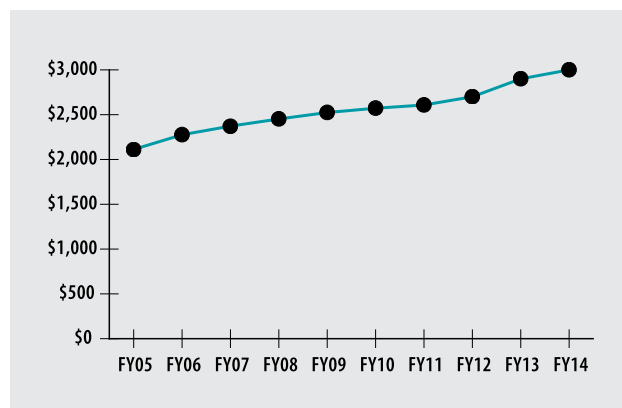
**5 years 2011**  
1.09%

### ACTUARIAL

▶ Funded Ratio	54.1%
▶ Date of Last Valuation	01/13
▶ Actuary	Stone Consulting
▶ Assumed Rate of Return	8.00%
▶ Funding Schedule	Varies Total Increasing
▶ Year Fully Funded	2030
▶ Unfunded Liability	\$34.3 M
▶ Total Pension Appropriation (Fiscal 2014)	\$3.0 M

	ACTIVE	RETIRED
▶ Number of Members	262	237
▶ Total Payroll/Benefit	\$10.5 M	\$4.8 M
▶ Average Salary/Benefit	\$40,300	\$20,300
▶ Average Age	48	72
▶ Average Service	13.2 years	NA

### 10-YEAR HISTORY OF APPROPRIATIONS (IN THOUSANDS)

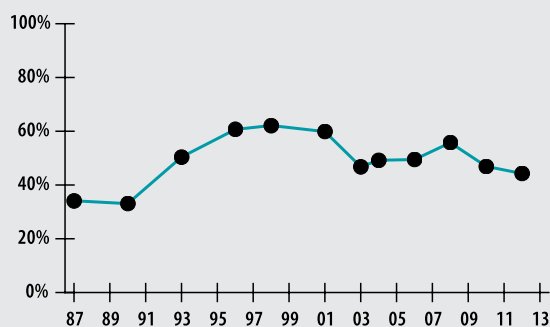


### EARNED INCOME OF DISABILITY RETIREES (2012)

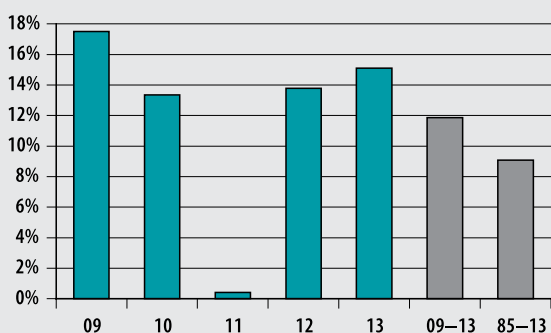
▶ Number of Disability Retirees	29
▶ Number Who Reported Earnings	6
▶ Number of Excess Earners	0
▶ Total Amount of Refund Due	\$0

▶ 2013 Return	15.32%
▶ 2013 Market Value	\$44.9 M
▶ 2009-2013 (Annualized)	11.93%
▶ 1985-2013 (Annualized)	9.68%

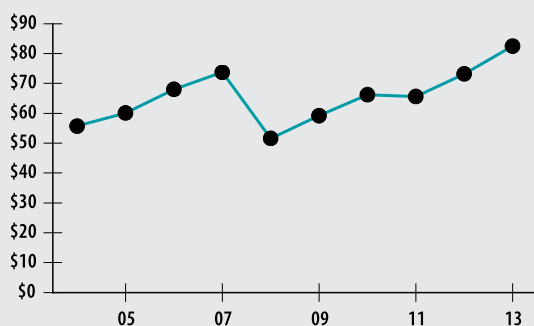
### FUNDED RATIO (1987-2013)



### INVESTMENT RETURN (2009-2013, 5 YEAR AND 29 YEAR AVERAGES)



### ASSET GROWTH (2004-2013) (MARKET VALUE IN MILLIONS)



### INVESTMENT RETURN HISTORY

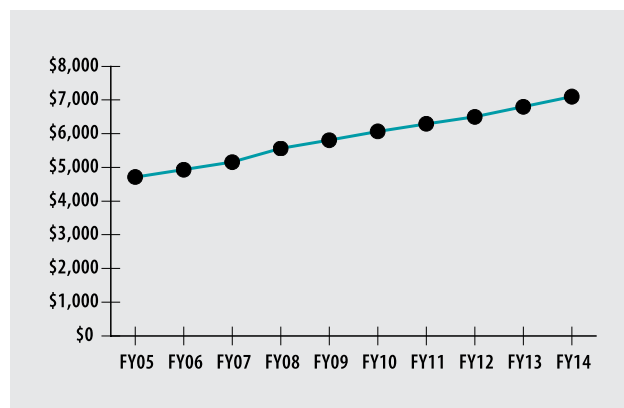
<b>29 years 2013</b> 9.08%	<b>28 years 2012</b> 8.88%	<b>27 years 2011</b> 8.70%
<b>10 years 2013</b> 6.51%	<b>10 years 2012</b> 7.13%	<b>10 years 2011</b> 4.75%
<b>5 years 2013</b> 11.87%	<b>5 years 2012</b> 1.53%	<b>5 years 2011</b> 0.70%

### ACTUARIAL

▶ Funded Ratio	44.3%
▶ Date of Last Valuation	01/12
▶ Actuary	The Segal Company
▶ Assumed Rate of Return	7.88%
▶ Funding Schedule	4.0% Increasing Phase-in
▶ Year Fully Funded	2037
▶ Unfunded Liability	\$84.7 M
▶ Total Pension Appropriation (Fiscal 2014)	\$7.1 M

	ACTIVE	RETIRED
▶ Number of Members	506	433
▶ Total Payroll/Benefit	\$23.1 M	\$9.4 M
▶ Average Salary/Benefit	\$45,700	\$21,800
▶ Average Age	50	NA
▶ Average Service	13.1 years	NA

### 10-YEAR HISTORY OF APPROPRIATIONS (IN THOUSANDS)

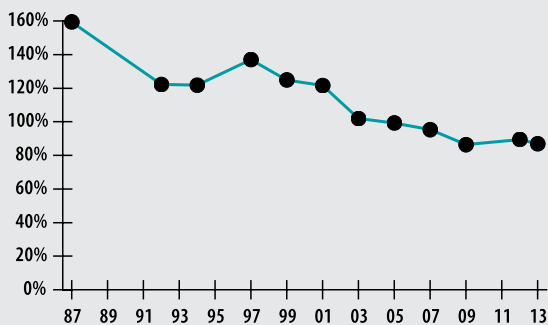


### EARNED INCOME OF DISABILITY RETIREES (2012)

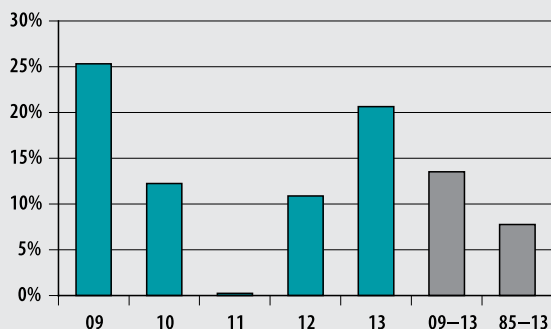
▶ Number of Disability Retirees	57
▶ Number Who Reported Earnings	16
▶ Number of Excess Earners	0
▶ Total Amount of Refund Due	\$0

▶ 2013 Return	15.10%
▶ 2013 Market Value	\$82.5 M
▶ 2009-2013 (Annualized)	11.87%
▶ 1985-2013 (Annualized)	9.08%

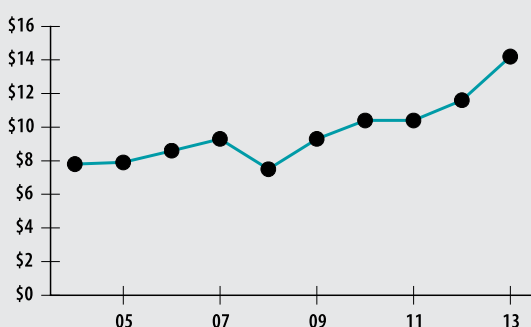
#### FUNDED RATIO (1987-2013)



#### INVESTMENT RETURN (2009-2013, 5 YEAR AND 29 YEAR AVERAGES)



#### ASSET GROWTH (2004-2013) (MARKET VALUE IN MILLIONS)



#### INVESTMENT RETURN HISTORY

**29 years 2013**  
7.78%

**28 years 2012**  
7.34%

**27 years 2011**  
7.21%

**10 years 2013**  
7.04%

**10 years 2012**  
6.25%

**10 years 2011**  
4.82%

**5 years 2013**  
13.54%

**5 years 2012**  
4.55%

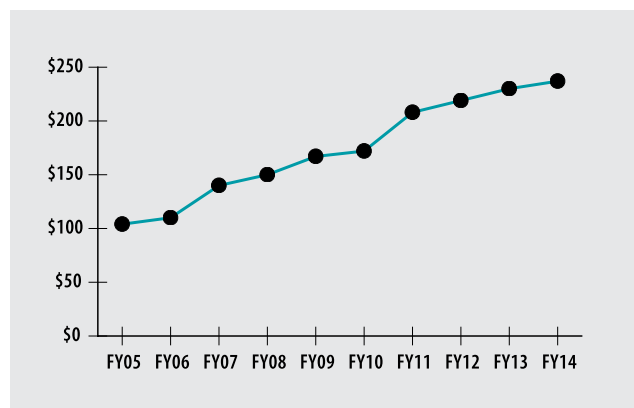
**5 years 2011**  
4.12%

#### ACTUARIAL

▶ Funded Ratio	86.9%
▶ Date of Last Valuation	01/13
▶ Actuary	PERAC
▶ Assumed Rate of Return	7.75%
▶ Funding Schedule	4.5% Increasing
▶ Year Fully Funded	2030
▶ Unfunded Liability	\$1.7 M
▶ Total Pension Appropriation (Fiscal 2014)	\$237,000

	ACTIVE	RETIRED
▶ Number of Members	40	24
▶ Total Payroll/Benefit	\$2.4 M	\$0.5 M
▶ Average Salary/Benefit	\$59,000	\$20,700
▶ Average Age	54	73
▶ Average Service	18.7 years	NA

#### 10-YEAR HISTORY OF APPROPRIATIONS (IN THOUSANDS)

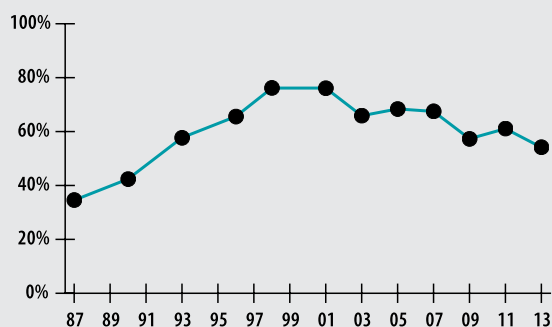


#### EARNED INCOME OF DISABILITY RETIREES (2012)

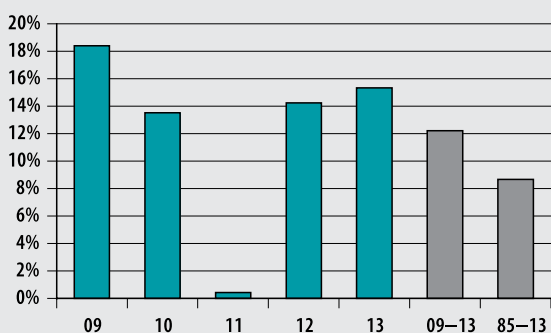
▶ Number of Disability Retirees	2
▶ Number Who Reported Earnings	0
▶ Number of Excess Earners	0
▶ Total Amount of Refund Due	\$0

▶ 2013 Return	20.64%
▶ 2013 Market Value	\$14.2 M
▶ 2009-2013 (Annualized)	13.54%
▶ 1985-2013 (Annualized)	7.78%

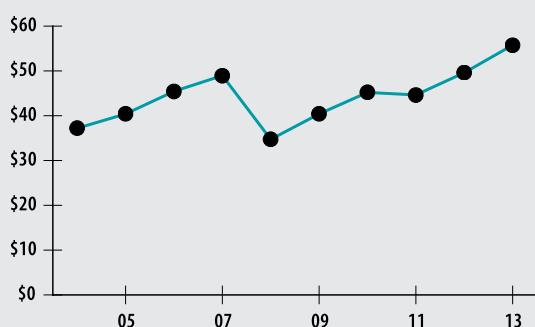
## FUNDED RATIO (1987-2013)



## INVESTMENT RETURN (2009-2013, 5 YEAR AND 29 YEAR AVERAGES)



## ASSET GROWTH (2004-2013) (MARKET VALUE IN MILLIONS)



## INVESTMENT RETURN HISTORY

**29 years 2013**  
8.68%

**28 years 2012**  
8.45%

**27 years 2011**  
8.24%

**10 years 2013**  
6.82%

**10 years 2012**  
6.86%

**10 years 2011**  
4.69%

**5 years 2013**  
12.22%

**5 years 2012**  
2.12%

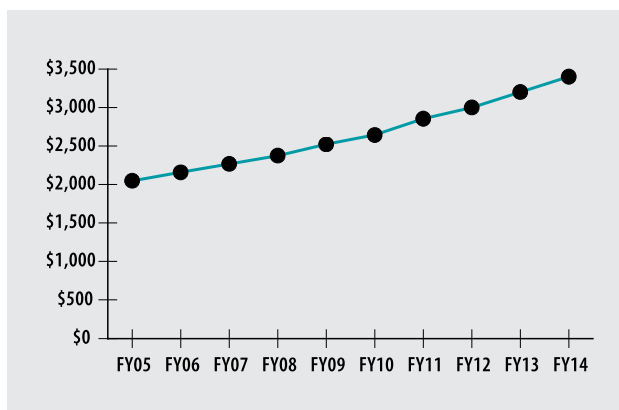
**5 years 2011**  
1.19%

## ACTUARIAL

▶ Funded Ratio	54.2%
▶ Date of Last Valuation	01/13
▶ Actuary	PERAC
▶ Assumed Rate of Return	7.75%
▶ Funding Schedule	5.5% Total Increasing
▶ Year Fully Funded	2037
▶ Unfunded Liability	\$41.2 M
▶ Total Pension Appropriation (Fiscal 2014)	\$3.4 M

	ACTIVE	RETIRED
▶ Number of Members	412	244
▶ Total Payroll/Benefit	\$14.9 M	\$5.0 M
▶ Average Salary/Benefit	\$36,200	\$20,600
▶ Average Age	47	70
▶ Average Service	10.4 years	NA

## 10-YEAR HISTORY OF APPROPRIATIONS (IN THOUSANDS)



## EARNED INCOME OF DISABILITY RETIREES (2012)

▶ Number of Disability Retirees	17
▶ Number Who Reported Earnings	4
▶ Number of Excess Earners	1
▶ Total Amount of Refund Due	\$9,105

▶ 2013 Return	15.35%
▶ 2013 Market Value	\$55.7 M
▶ 2009-2013 (Annualized)	12.22%
▶ 1985-2013 (Annualized)	8.68%



## Board Members

Richard M. Theroux (Chairperson),  
Patricia C. Donovan, Patrick O'Neil,  
Laurel Placzek, Karl Schmaelzle

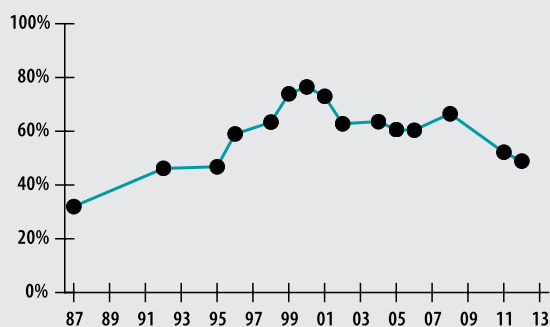
## Board Administrator

Julianne Bartley

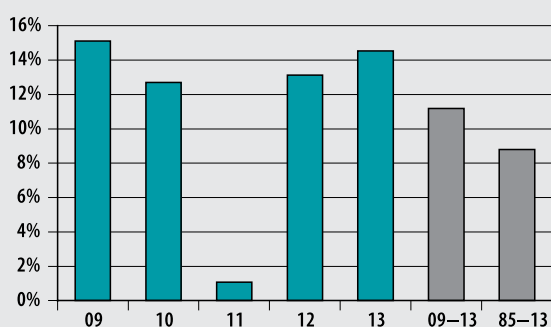
## Board Meeting

Next to the last business day of each month

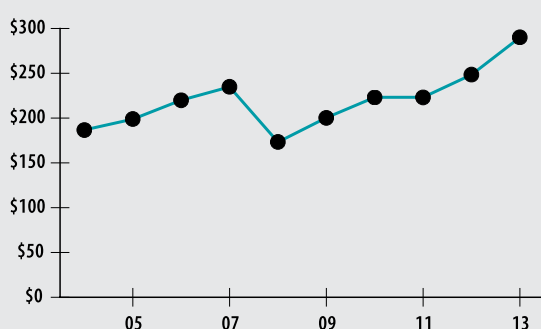
## FUNDED RATIO (1987-2013)



## INVESTMENT RETURN (2009-2013, 5 YEAR AND 29 YEAR AVERAGES)



## ASSET GROWTH (2004-2013) (MARKET VALUE IN MILLIONS)



## INVESTMENT RETURN HISTORY

**29 years 2013**  
8.79%

**28 years 2012**  
8.59%

**27 years 2011**  
8.43%

**10 years 2013**  
6.04%

**10 years 2012**  
6.59%

**10 years 2011**  
4.10%

**5 years 2013**  
11.18%

**5 years 2012**  
2.14%

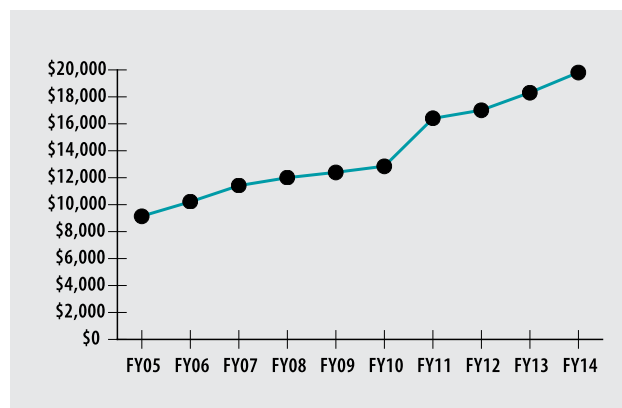
**5 years 2011**  
0.93%

## ACTUARIAL

▶ Funded Ratio	48.9%
▶ Date of Last Valuation	01/12
▶ Actuary	The Segal Company
▶ Assumed Rate of Return	8.00%
▶ Funding Schedule	4.0% Increasing Phase-in
▶ Year Fully Funded	2036
▶ Unfunded Liability	\$255.0 M
▶ Total Pension Appropriation (Fiscal 2014)	\$19.8 M

	ACTIVE	RETIRED
▶ Number of Members	2,568	1,538
▶ Total Payroll/Benefit	\$90.0 M	\$26.0 M
▶ Average Salary/Benefit	\$35,000	\$16,900
▶ Average Age	49	NA
▶ Average Service	12.2 years	NA

## 10-YEAR HISTORY OF APPROPRIATIONS (IN THOUSANDS)

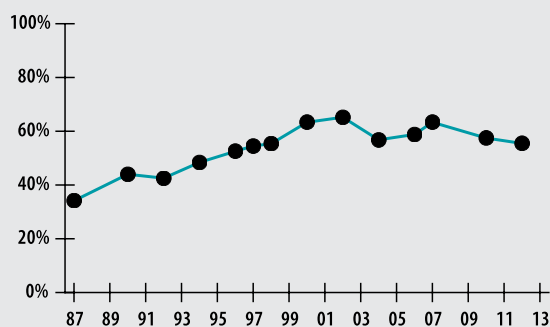


## EARNED INCOME OF DISABILITY RETIREES (2012)

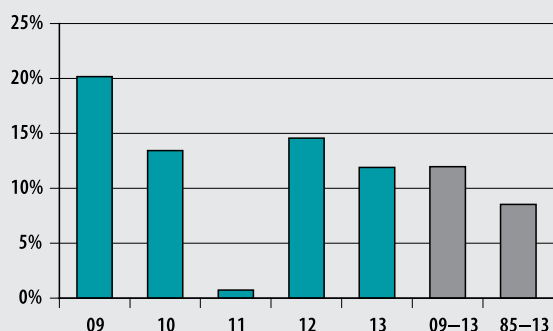
▶ Number of Disability Retirees	115
▶ Number Who Reported Earnings	34
▶ Number of Excess Earners	4
▶ Total Amount of Refund Due	\$28,652

▶ 2013 Return	14.53%
▶ 2013 Market Value	\$279.0 M
▶ 2009-2013 (Annualized)	11.18%
▶ 1985-2013 (Annualized)	8.79%

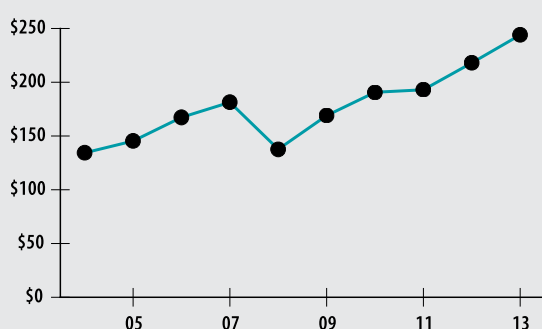
#### FUNDED RATIO (1987-2013)



#### INVESTMENT RETURN (2009-2013, 5 YEAR AND 29 YEAR AVERAGES)



#### ASSET GROWTH (2004-2013) (MARKET VALUE IN MILLIONS)



#### INVESTMENT RETURN HISTORY

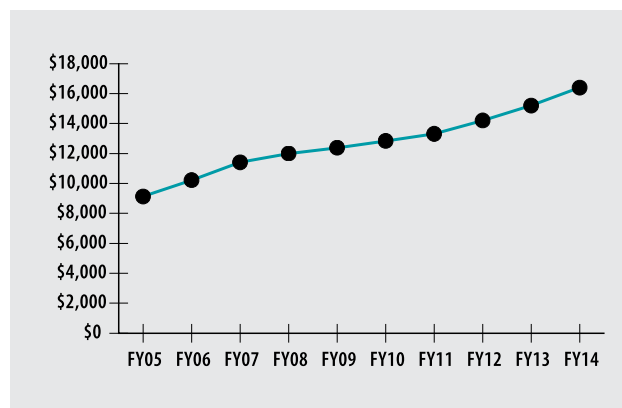
<b>29 years 2013</b> 8.56%	<b>28 years 2012</b> 8.44%	<b>27 years 2011</b> 8.22%
<b>10 years 2013</b> 6.98%	<b>10 years 2012</b> 7.95%	<b>10 years 2011</b> 4.98%
<b>5 years 2013</b> 11.99%	<b>5 years 2012</b> 3.73%	<b>5 years 2011</b> 2.08%

#### ACTUARIAL

▶ Funded Ratio	55.5%
▶ Date of Last Valuation	01/12
▶ Actuary	Stone Consulting
▶ Assumed Rate of Return	7.88%
▶ Funding Schedule	4.0% Total Increasing
▶ Year Fully Funded	2034
▶ Unfunded Liability	\$163.4 M
▶ Total Pension Appropriation (Fiscal 2014)	\$16.4 M

	ACTIVE	RETIRED
▶ Number of Members	1,879	1,111
▶ Total Payroll/Benefit	\$68.6 M	\$18.8 M
▶ Average Salary/Benefit	\$36,500	\$17,000
▶ Average Age	48	NA
▶ Average Service	11.6 years	NA

#### 10-YEAR HISTORY OF APPROPRIATIONS (IN THOUSANDS)

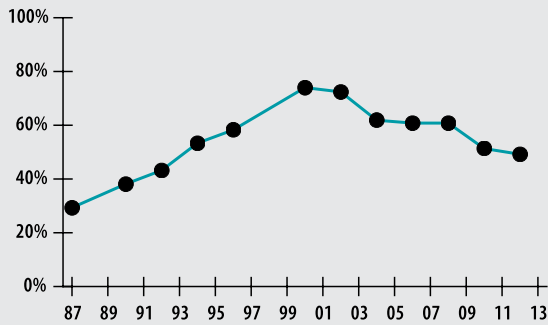


#### EARNED INCOME OF DISABILITY RETIREES (2012)

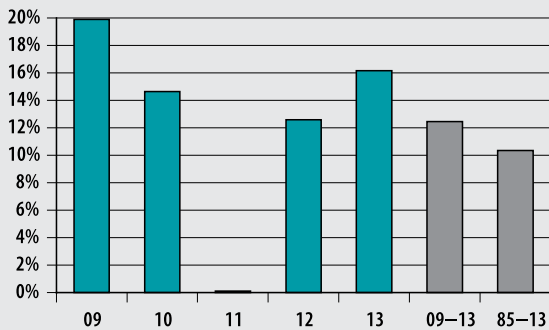
▶ Number of Disability Retirees	79
▶ Number Who Reported Earnings	25
▶ Number of Excess Earners	1
▶ Total Amount of Refund Due	\$1,744

▶ 2013 Return	11.93%
▶ 2013 Market Value	\$244.0 M
▶ 2009-2013 (Annualized)	11.99%
▶ 1985-2013 (Annualized)	8.56%

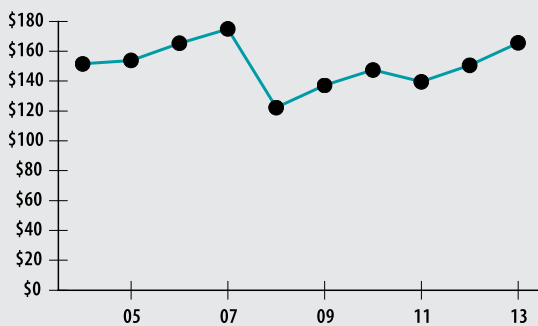
## FUNDED RATIO (1987-2013)



## INVESTMENT RETURN (2009-2013, 5 YEAR AND 29 YEAR AVERAGES)



## ASSET GROWTH (2004-2013) (MARKET VALUE IN MILLIONS)



## INVESTMENT RETURN HISTORY

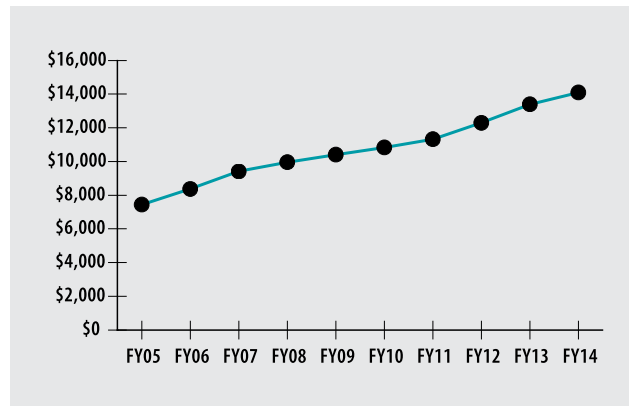
<b>29 years 2013</b>	<b>28 years 2012</b>	<b>27 years 2011</b>
10.35%	10.15%	10.06%
<b>10 years 2013</b>	<b>10 years 2012</b>	<b>10 years 2011</b>
7.53%	8.30%	6.30%
<b>5 years 2013</b>	<b>5 years 2012</b>	<b>5 years 2011</b>
12.47%	2.71%	2.56%

## ACTUARIAL

▶ Funded Ratio	49.2%
▶ Date of Last Valuation	01/12
▶ Actuary	Stone Consulting
▶ Assumed Rate of Return	8.00%
▶ Funding Schedule	4.0% Increasing
▶ Year Fully Funded	2032
▶ Unfunded Liability	\$155.6 M
▶ Total Pension Appropriation (Fiscal 2014)	\$14.1 M

	ACTIVE	RETIRED
▶ Number of Members	894	1,067
▶ Total Payroll/Benefit	\$36.5 M	\$21.5 M
▶ Average Salary/Benefit	\$40,800	\$20,200
▶ Average Age	49	72
▶ Average Service	13.1 years	NA

## 10-YEAR HISTORY OF APPROPRIATIONS (IN THOUSANDS)



## EARNED INCOME OF DISABILITY RETIREES (2012)

▶ Number of Disability Retirees	107
▶ Number Who Reported Earnings	21
▶ Number of Excess Earners	0
▶ Total Amount of Refund Due	\$0

▶ 2013 Return	16.17%
▶ 2013 Market Value	\$165.6 M
▶ 2009-2013 (Annualized)	12.47%
▶ 1985-2013 (Annualized)	10.35%

## Board Members

Ted C. Alexiades (Chairperson),  
Eileen A. McCracken, Jean M. Montgomery,  
Susan M. Nickerson, Henry F.G. Wey, III

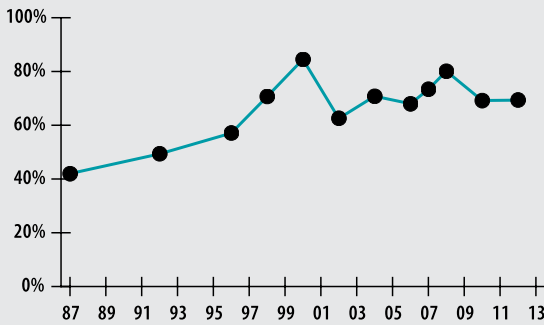
## Board Administrator

Nancy M. Hutt

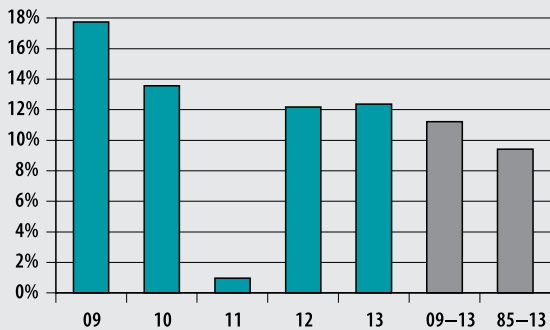
## Board Meeting

Fourth Tuesday of each month at 10:00 am

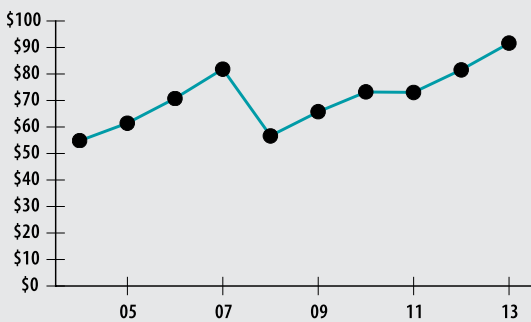
### FUNDED RATIO (1987-2013)



### INVESTMENT RETURN (2009-2013, 5 YEAR AND 29 YEAR AVERAGES)



### ASSET GROWTH (2004-2013) (MARKET VALUE IN MILLIONS)



### INVESTMENT RETURN HISTORY

#### 29 years 2013

9.42%

#### 28 years 2012

9.31%

#### 27 years 2011

9.21%

#### 10 years 2013

7.32%

#### 10 years 2012

8.60%

#### 10 years 2011

6.35%

#### 5 years 2013

11.22%

#### 5 years 2012

1.35%

#### 5 years 2011

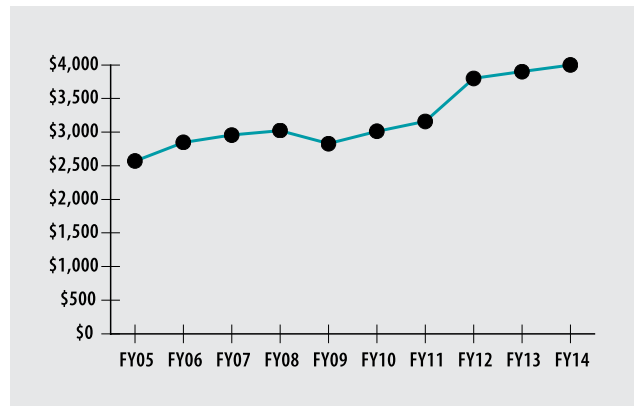
1.32%

## ACTUARIAL

▶ Funded Ratio	69.4%
▶ Date of Last Valuation	01/12
▶ Actuary	KMS Actuaries
▶ Assumed Rate of Return	8.00%
▶ Funding Schedule	3.4% Total Increasing
▶ Year Fully Funded	2032
▶ Unfunded Liability	\$35.1 M
▶ Total Pension Appropriation (Fiscal 2014)	\$4.0 M

	ACTIVE	RETIRED
▶ Number of Members	533	285
▶ Total Payroll/Benefit	\$23.3 M	\$6.4 M
▶ Average Salary/Benefit	\$43,700	\$22,500
▶ Average Age	49	73
▶ Average Service	10.7 years	NA

## 10-YEAR HISTORY OF APPROPRIATIONS (IN THOUSANDS)



## EARNED INCOME OF DISABILITY RETIREES (2012)

▶ Number of Disability Retirees	14
▶ Number Who Reported Earnings	3
▶ Number of Excess Earners	0
▶ Total Amount of Refund Due	\$0

▶ 2013 Return	12.37%
▶ 2013 Market Value	\$91.6 M
▶ 2009-2013 (Annualized)	11.22%
▶ 1985-2013 (Annualized)	9.42%

## Board Members

John T. McCarthy (Chairperson),  
Jorge Neves, Esq., Daniel R. Owens,  
Bellamy Schmidt, Brian G. Smith

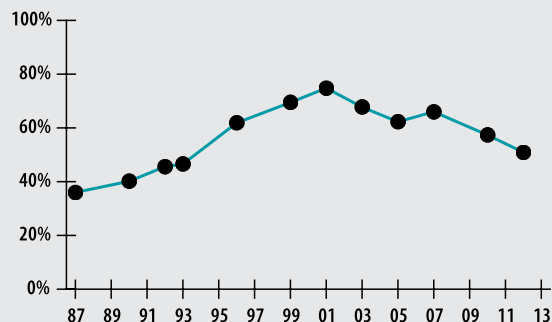
## Board Administrator

Cheryl A. Dugre

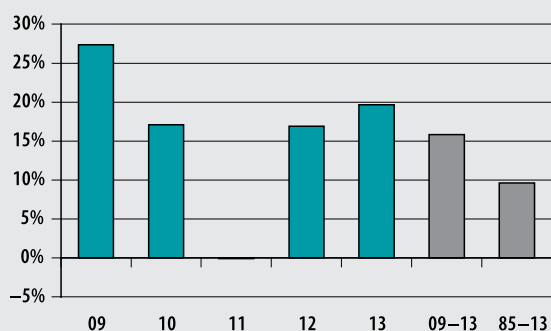
## Board Meeting

Third Tuesday of each month at 9:00 am

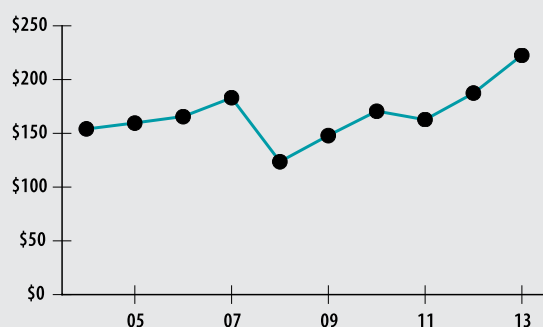
### FUNDED RATIO (1987-2013)



### INVESTMENT RETURN (2009-2013, 5 YEAR AND 29 YEAR AVERAGES)



### ASSET GROWTH (2004-2013) (MARKET VALUE IN MILLIONS)



### INVESTMENT RETURN HISTORY

**29 years 2013**  
9.64%

**28 years 2012**  
9.30%

**27 years 2011**  
9.03%

**10 years 2013**  
6.96%

**10 years 2012**  
7.21%

**10 years 2011**  
4.26%

**5 years 2013**  
15.83%

**5 years 2012**  
3.30%

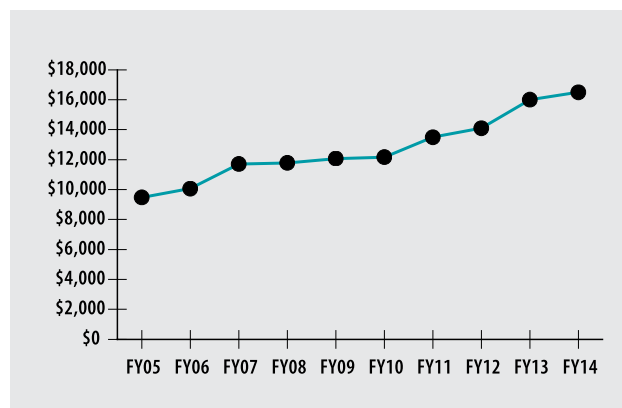
**5 years 2011**  
1.54%

## ACTUARIAL

▶ Funded Ratio	50.9%
▶ Date of Last Valuation	01/12
▶ Actuary	The Segal Company
▶ Assumed Rate of Return	8.00%
▶ Funding Schedule	3.75% Increasing
▶ Year Fully Funded	2032
▶ Unfunded Liability	\$165.1 M
▶ Total Pension Appropriation (Fiscal 2014)	\$16.5 M

	ACTIVE	RETIRED
▶ Number of Members	1,228	922
▶ Total Payroll/Benefit	\$53.5 M	\$20.5 M
▶ Average Salary/Benefit	\$43,600	\$22,200
▶ Average Age	46	NA
▶ Average Service	12.2 years	NA

## 10-YEAR HISTORY OF APPROPRIATIONS (IN THOUSANDS)

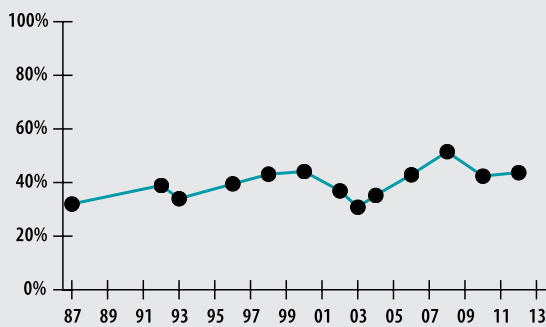


## EARNED INCOME OF DISABILITY RETIREES (2012)

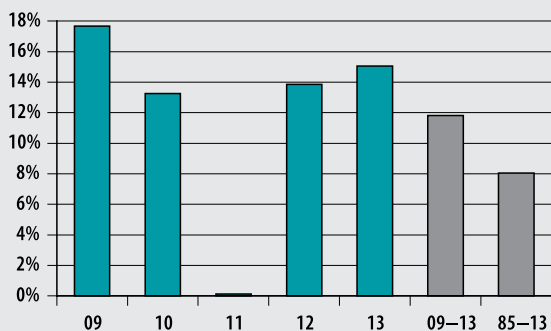
▶ Number of Disability Retirees	90
▶ Number Who Reported Earnings	14
▶ Number of Excess Earners	1
▶ Total Amount of Refund Due	\$2,843

▶ 2013 Return	19.64%
▶ 2013 Market Value	\$222.4 M
▶ 2009-2013 (Annualized)	15.83%
▶ 1985-2013 (Annualized)	9.64%

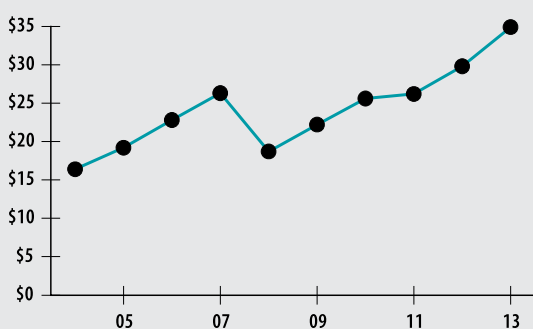
### FUNDED RATIO (1987-2013)



### INVESTMENT RETURN (2009-2013, 5 YEAR AND 29 YEAR AVERAGES)



### ASSET GROWTH (2004-2013) (MARKET VALUE IN MILLIONS)



### INVESTMENT RETURN HISTORY

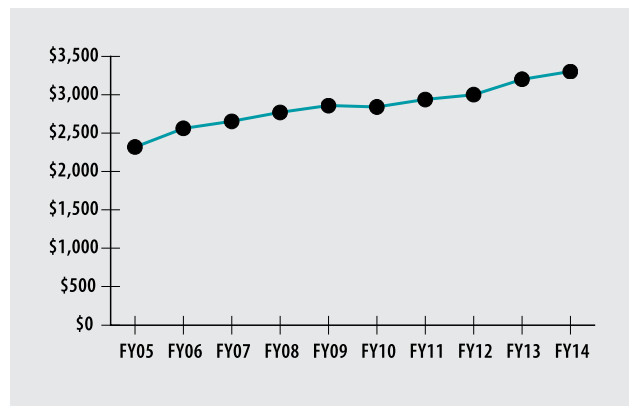
<b>29 years 2013</b> 8.04%	<b>28 years 2012</b> 7.80%	<b>27 years 2011</b> 7.58%
<b>10 years 2013</b> 7.48%	<b>10 years 2012</b> 8.22%	<b>10 years 2011</b> 5.53%
<b>5 years 2013</b> 11.82%	<b>5 years 2012</b> 1.46%	<b>5 years 2011</b> 1.14%

### ACTUARIAL

▶ Funded Ratio	43.7%
▶ Date of Last Valuation	01/12
▶ Actuary	Stone Consulting
▶ Assumed Rate of Return	7.75%
▶ Funding Schedule	3.8% Increasing
▶ Year Fully Funded	2033
▶ Unfunded Liability	\$33.8 M
▶ Total Pension Appropriation (Fiscal 2014)	\$3.3 M

	ACTIVE	RETIRED
▶ Number of Members	178	130
▶ Total Payroll/Benefit	\$9.2 M	\$3.2 M
▶ Average Salary/Benefit	\$51,600	\$24,200
▶ Average Age	50	71
▶ Average Service	12.8 years	NA

### 10-YEAR HISTORY OF APPROPRIATIONS (IN THOUSANDS)



### EARNED INCOME OF DISABILITY RETIREES (2012)

▶ Number of Disability Retirees	28
▶ Number Who Reported Earnings	11
▶ Number of Excess Earners	0
▶ Total Amount of Refund Due	\$0

▶ 2013 Return	15.06%
▶ 2013 Market Value	\$34.9 M
▶ 2009-2013 (Annualized)	11.82%
▶ 1985-2013 (Annualized)	8.04%

## Lawrence

354 Merrimack Street  
Suite 302, Entry C  
Lawrence, MA 01843  
Phone 978-620-3570  
Fax 978-683-5894

### Board Members

William F. Bateman (Chairperson),  
Thomas M. Cuddy, Kevin Loughlin,  
John A. Pica, Gina M. Rizzo

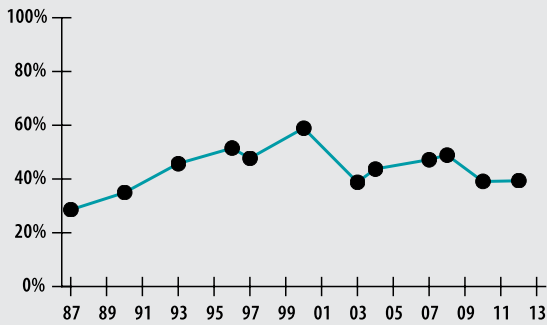
### Board Administrator

Diane Cockroft

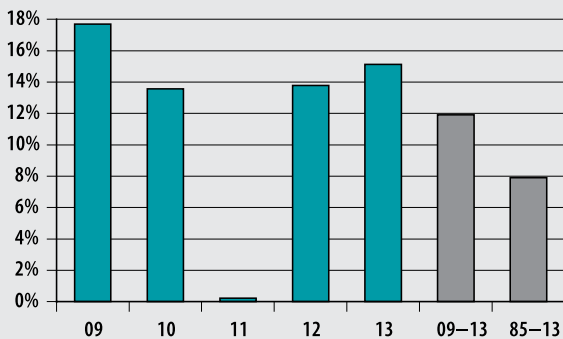
### Board Meeting

Varies

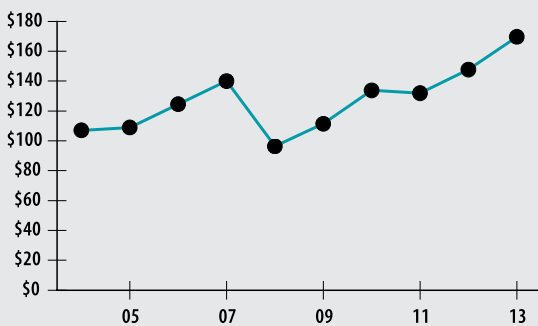
### FUNDED RATIO (1987-2013)



### INVESTMENT RETURN (2009-2013, 5 YEAR AND 29 YEAR AVERAGES)



### ASSET GROWTH (2004-2013) (MARKET VALUE IN MILLIONS)



### INVESTMENT RETURN HISTORY

#### 29 years 2013

7.91%

#### 28 years 2012

7.66%

#### 27 years 2011

7.44%

#### 10 years 2013

5.92%

#### 10 years 2012

6.49%

#### 10 years 2011

4.02%

#### 5 years 2013

11.91%

#### 5 years 2012

1.55%

#### 5 years 2011

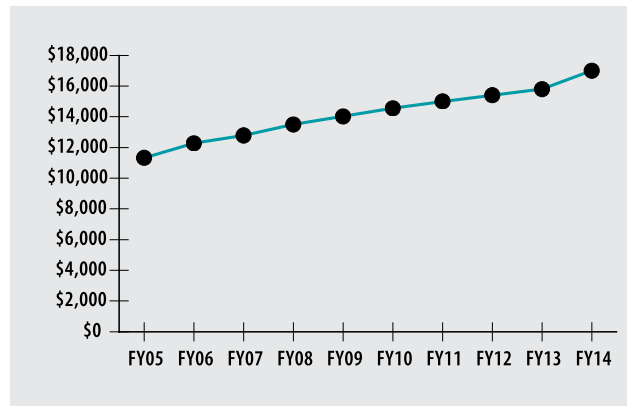
0.75%

## ACTUARIAL

▶ Funded Ratio	39.4%
▶ Date of Last Valuation	01/12
▶ Actuary	Stone Consulting
▶ Assumed Rate of Return	7.75%
▶ Funding Schedule	3.42% Increasing
▶ Year Fully Funded	2038
▶ Unfunded Liability	\$203.5 M
▶ Total Pension Appropriation (Fiscal 2014)	\$17.0 M

	ACTIVE	RETIRED
▶ Number of Members	1,313	885
▶ Total Payroll/Benefit	\$55.8 M	\$20.5 M
▶ Average Salary/Benefit	\$42,500	\$23,100
▶ Average Age	46	74
▶ Average Service	11.9 years	NA

## 10-YEAR HISTORY OF APPROPRIATIONS (IN THOUSANDS)



## EARNED INCOME OF DISABILITY RETIREES (2012)

▶ Number of Disability Retirees	132
▶ Number Who Reported Earnings	20
▶ Number of Excess Earners	0
▶ Total Amount of Refund Due	\$0

▶ 2013 Return	15.14%
▶ 2013 Market Value	\$169.6 M
▶ 2009-2013 (Annualized)	11.91%
▶ 1985-2013 (Annualized)	7.91%



**Board Members**

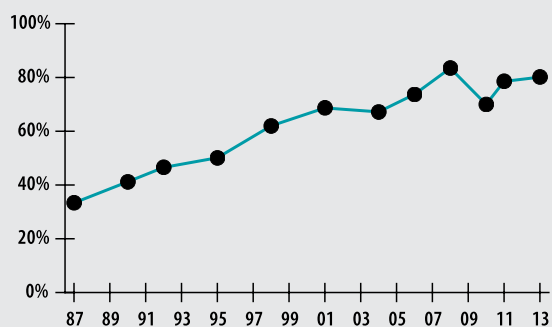
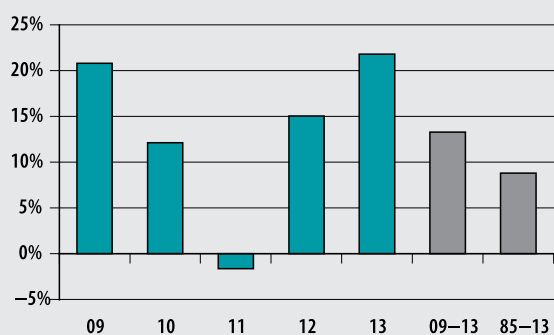
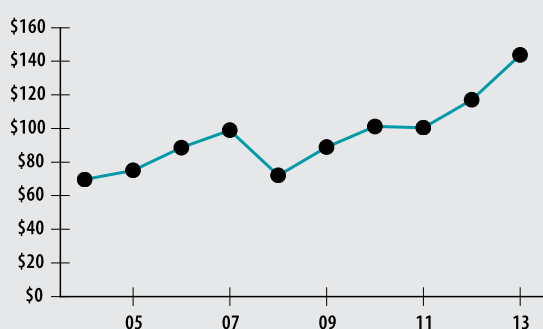
John J. Richard (Chairperson),  
Paul R. Doig, David R. LaPlante,  
Mark R. O'Donnell, John F. Picone

**Board Administrator**

Kerry Boudreau

**Board Meeting**

Varies

**FUNDED RATIO (1987-2013)**

**INVESTMENT RETURN (2009-2013, 5 YEAR AND 29 YEAR AVERAGES)**

**ASSET GROWTH (2004-2013) (MARKET VALUE IN MILLIONS)**

**INVESTMENT RETURN HISTORY**
**29 years 2013**

8.83%

**28 years 2012**

8.39%

**27 years 2011**

8.15%

**10 years 2013**

7.48%

**10 years 2012**

7.16%

**10 years 2011**

5.27%

**5 years 2013**

13.31%

**5 years 2012**

1.75%

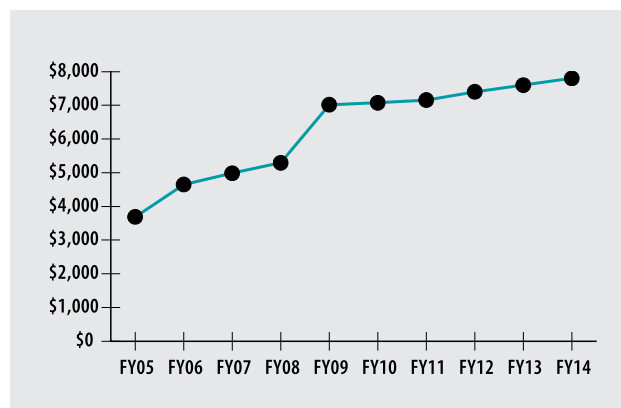
**5 years 2011**

0.99%

**ACTUARIAL**

▶ Funded Ratio	80.2%
▶ Date of Last Valuation	01/13
▶ Actuary	Stone Consulting
▶ Assumed Rate of Return	6.75%
▶ Funding Schedule	2.5-3.0% Total Increasing
▶ Year Fully Funded	2019
▶ Unfunded Liability	\$28.9 M
▶ Total Pension Appropriation (Fiscal 2014)	\$7.8 M

	ACTIVE	RETIRED
▶ Number of Members	577	370
▶ Total Payroll/Benefit	\$24.8 M	\$7.7 M
▶ Average Salary/Benefit	\$43,100	\$20,700
▶ Average Age	47	74
▶ Average Service	12.3 years	NA

**10-YEAR HISTORY OF APPROPRIATIONS (IN THOUSANDS)**

**EARNED INCOME OF DISABILITY RETIREES (2012)**

▶ Number of Disability Retirees	38
▶ Number Who Reported Earnings	14
▶ Number of Excess Earners	0
▶ Total Amount of Refund Due	\$0

▶ 2013 Return	21.82%
▶ 2013 Market Value	\$143.8 M
▶ 2009-2013 (Annualized)	13.31%
▶ 1985-2013 (Annualized)	8.83%

**Board Members**

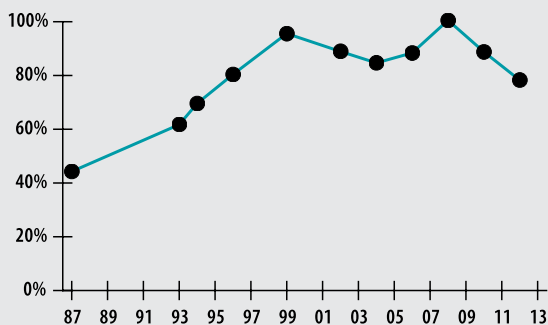
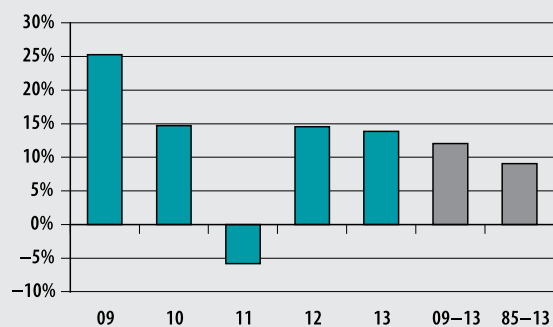
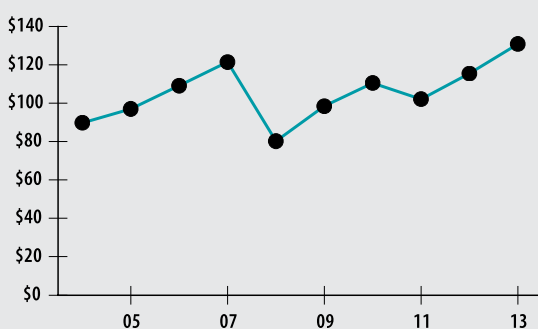
Robert Cunha (Chairperson),  
Robert Addelson, Alan Fields, Joseph Foley,  
Michael McNabb

**Board Administrator**

Marguerite Oliva

**Board Meeting**

Varies

**FUNDED RATIO (1987-2013)**

**INVESTMENT RETURN (2009-2013, 5 YEAR AND 29 YEAR AVERAGES)**

**ASSET GROWTH (2004-2013) (MARKET VALUE IN MILLIONS)**

**INVESTMENT RETURN HISTORY**
**29 years 2013**

9.04%

**28 years 2012**

8.87%

**27 years 2011**

8.67%

**10 years 2013**

6.74%

**10 years 2012**

7.12%

**10 years 2011**

5.07%

**5 years 2013**

12.04%

**5 years 2012**

0.82%

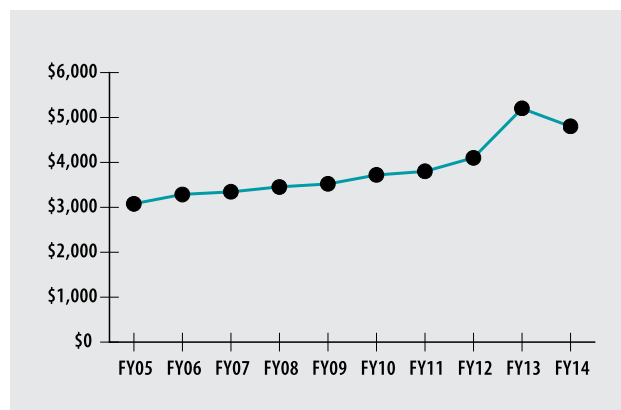
**5 years 2011**

0.60%

**ACTUARIAL**

▶ Funded Ratio	78.3%
▶ Date of Last Valuation	01/12
▶ Actuary	Buck Consultants
▶ Assumed Rate of Return	7.75%
▶ Funding Schedule	4.5% Increasing Phase-in
▶ Year Fully Funded	2030
▶ Unfunded Liability	\$33.6 M
▶ Total Pension Appropriation (Fiscal 2014)	\$4.8 M

	ACTIVE	RETIRED
▶ Number of Members	632	382
▶ Total Payroll/Benefit	\$31.2 M	\$8.2 M
▶ Average Salary/Benefit	\$49,300	\$21,400
▶ Average Age	47	NA
▶ Average Service	10.9 years	NA

**10-YEAR HISTORY OF APPROPRIATIONS (IN THOUSANDS)**

**EARNED INCOME OF DISABILITY RETIREES (2012)**

▶ Number of Disability Retirees	27
▶ Number Who Reported Earnings	9
▶ Number of Excess Earners	1
▶ Total Amount of Refund Due	\$41,333

▶ 2013 Return	13.88%
▶ 2013 Market Value	\$130.8 M
▶ 2009-2013 (Annualized)	12.04%
▶ 1985-2013 (Annualized)	9.04%

## Lowell

City Hall, Room 3  
375 Merrimack Street  
Lowell, MA 01852-5998  
Phone 978-674-4094  
Fax 978-446-7019

### Board Members

Joseph Mahoney (Chairperson),  
Michael M. Brennan, William Desrosiers,  
David Keene, Hannah York

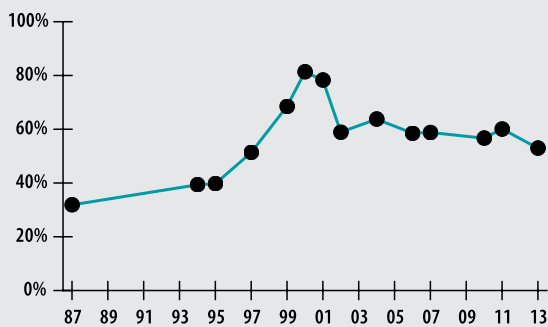
### Board Administrator

Shannon Dowd

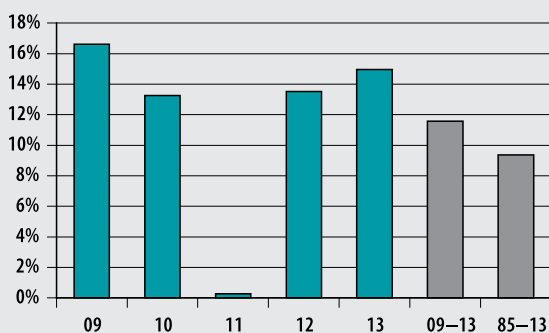
### Board Meeting

Varies

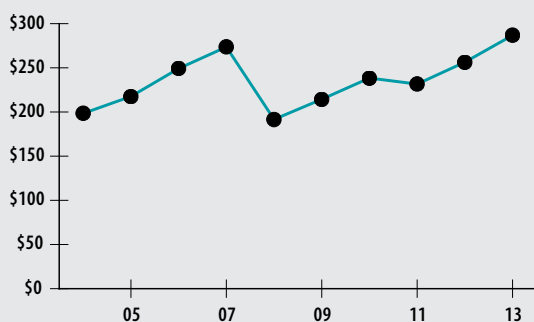
### FUNDED RATIO (1987-2013)



### INVESTMENT RETURN (2009-2013, 5 YEAR AND 29 YEAR AVERAGES)



### ASSET GROWTH (2004-2013) (MARKET VALUE IN MILLIONS)



### INVESTMENT RETURN HISTORY

#### 29 years 2013

9.36%

#### 28 years 2012

9.16%

#### 27 years 2011

9.00%

#### 10 years 2013

7.27%

#### 10 years 2012

7.69%

#### 10 years 2011

5.01%

#### 5 years 2013

11.57%

#### 5 years 2012

1.24%

#### 5 years 2011

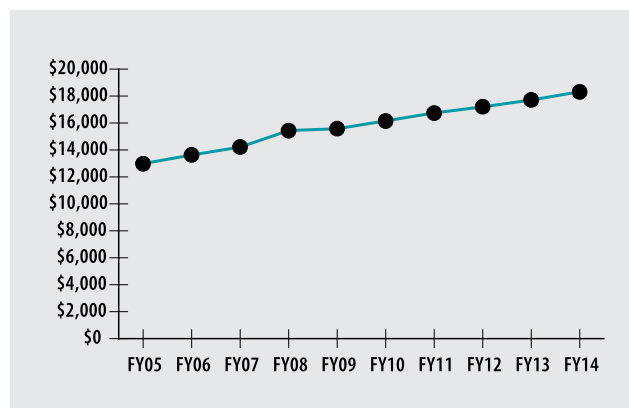
0.93%

## ACTUARIAL

▶ Funded Ratio	53.0%
▶ Date of Last Valuation	01/13
▶ Actuary	KMS Actuaries
▶ Assumed Rate of Return	8.00%
▶ Funding Schedule	4.0% Increasing
▶ Year Fully Funded	2036
▶ Unfunded Liability	\$233.0 M
▶ Total Pension Appropriation (Fiscal 2014)	\$18.3 M

	ACTIVE	RETIRED
▶ Number of Members	1,621	1,159
▶ Total Payroll/Benefit	\$75.1 M	\$29.5 M
▶ Average Salary/Benefit	\$46,300	\$25,400
▶ Average Age	47	73
▶ Average Service	13.5 years	NA

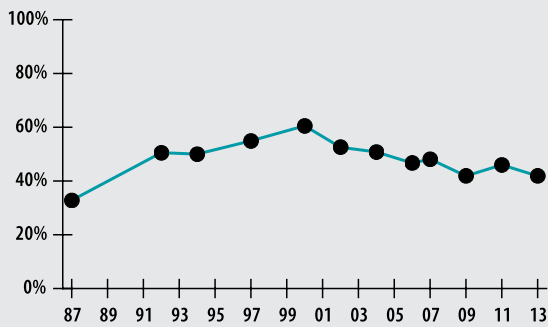
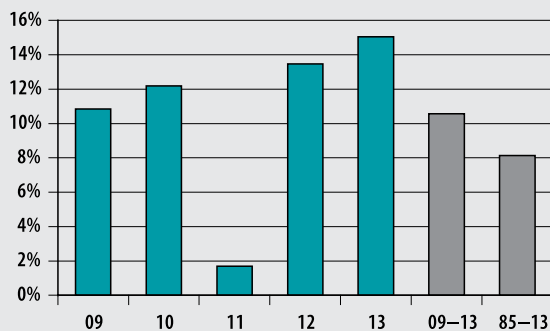
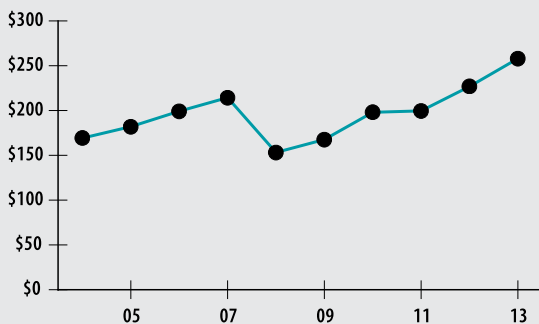
## 10-YEAR HISTORY OF APPROPRIATIONS (IN THOUSANDS)



## EARNED INCOME OF DISABILITY RETIREES (2012)

▶ Number of Disability Retirees	186
▶ Number Who Reported Earnings	36
▶ Number of Excess Earners	1
▶ Total Amount of Refund Due	\$13,788

▶ 2013 Return	14.97%
▶ 2013 Market Value	\$286.8 M
▶ 2009-2013 (Annualized)	11.57%
▶ 1985-2013 (Annualized)	9.36%

**FUNDED RATIO (1987-2013)****INVESTMENT RETURN (2009-2013, 5 YEAR AND 29 YEAR AVERAGES)****ASSET GROWTH (2004-2013) (MARKET VALUE IN MILLIONS)****INVESTMENT RETURN HISTORY**

**29 years 2013**  
8.14%

**28 years 2012**  
7.90%

**27 years 2011**  
7.70%

**10 years 2013**  
6.15%

**10 years 2012**  
6.52%

**10 years 2011**  
4.22%

**5 years 2013**  
10.56%

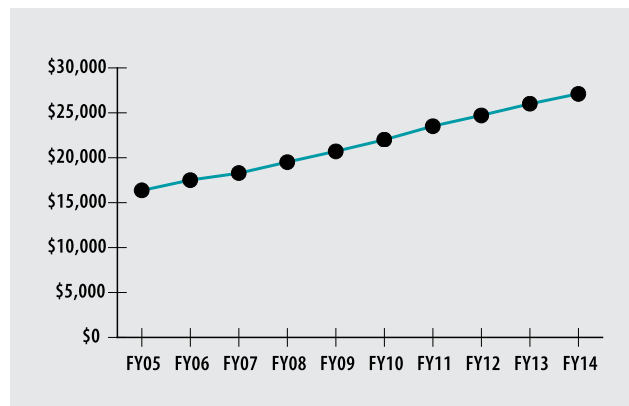
**5 years 2012**  
0.91%

**5 years 2011**  
0.33%

**ACTUARIAL**

▶ Funded Ratio	41.9%
▶ Date of Last Valuation	01/13
▶ Actuary	PERAC
▶ Assumed Rate of Return	7.75%
▶ Funding Schedule	4.0% Increasing Phase-in
▶ Year Fully Funded	2033
▶ Unfunded Liability	\$307.7 M
▶ Total Pension Appropriation (Fiscal 2014)	\$27.1 M

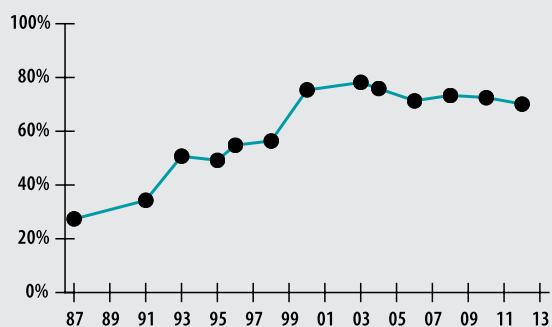
	ACTIVE	RETIRED
▶ Number of Members	1,295	1,200
▶ Total Payroll/Benefit	\$69.8 M	\$31.2 M
▶ Average Salary/Benefit	\$53,900	\$26,000
▶ Average Age	50	75
▶ Average Service	15.4 years	NA

**10-YEAR HISTORY OF APPROPRIATIONS (IN THOUSANDS)****EARNED INCOME OF DISABILITY RETIREES (2012)**

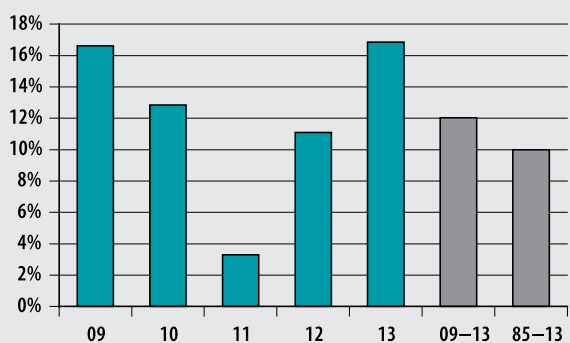
▶ Number of Disability Retirees	176
▶ Number Who Reported Earnings	27
▶ Number of Excess Earners	1
▶ Total Amount of Refund Due	\$1,082

▶ 2013 Return	15.06%
▶ 2013 Market Value	\$257.8 M
▶ 2009-2013 (Annualized)	10.56%
▶ 1985-2013 (Annualized)	8.14%

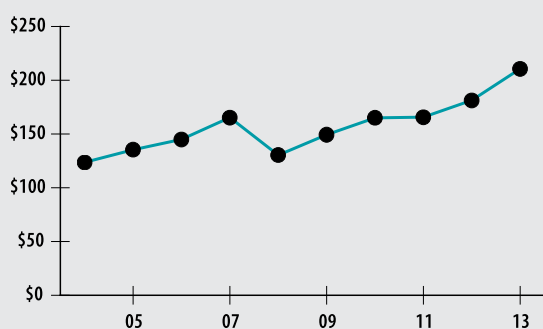
### FUNDED RATIO (1987-2013)



### INVESTMENT RETURN (2009-2013, 5 YEAR AND 29 YEAR AVERAGES)



### ASSET GROWTH (2004-2013) (MARKET VALUE IN MILLIONS)



### INVESTMENT RETURN HISTORY

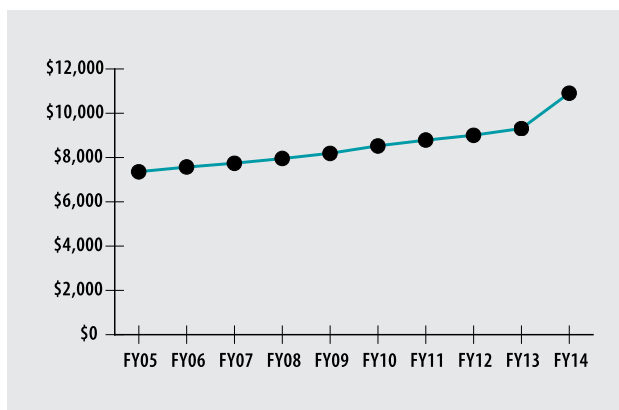
<b>29 years 2013</b>	<b>28 years 2012</b>	<b>27 years 2011</b>
10.00%	9.76%	9.71%
<b>10 years 2013</b>	<b>10 years 2012</b>	<b>10 years 2011</b>
7.79%	7.67%	5.96%
<b>5 years 2013</b>	<b>5 years 2012</b>	<b>5 years 2011</b>
12.03%	3.73%	4.61%

## ACTUARIAL

▶ Funded Ratio	70.1%
▶ Date of Last Valuation	01/12
▶ Actuary	PERAC
▶ Assumed Rate of Return	8.00%
▶ Funding Schedule	2.3% Increasing Phase-in
▶ Year Fully Funded	2030
▶ Unfunded Liability	\$76.5 M
▶ Total Pension Appropriation (Fiscal 2014)	\$10.9 M

	ACTIVE	RETIRED
▶ Number of Members	797	669
▶ Total Payroll/Benefit	\$37.9 M	\$14.9 M
▶ Average Salary/Benefit	\$47,600	\$22,200
▶ Average Age	49	74
▶ Average Service	13.3 years	NA

## 10-YEAR HISTORY OF APPROPRIATIONS (IN THOUSANDS)



## EARNED INCOME OF DISABILITY RETIREES (2012)

▶ Number of Disability Retirees	99
▶ Number Who Reported Earnings	25
▶ Number of Excess Earners	1
▶ Total Amount of Refund Due	\$42,879

▶ 2013 Return	16.85%
▶ 2013 Market Value	\$210.5 M
▶ 2009-2013 (Annualized)	12.03%
▶ 1985-2013 (Annualized)	10.00%

**Board Members**

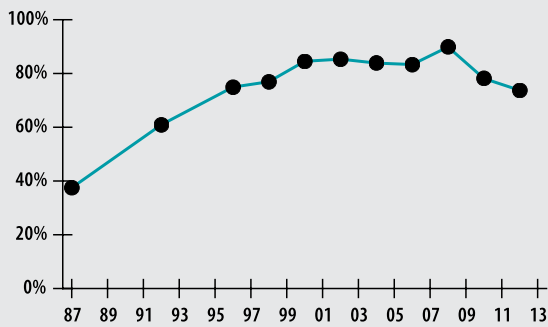
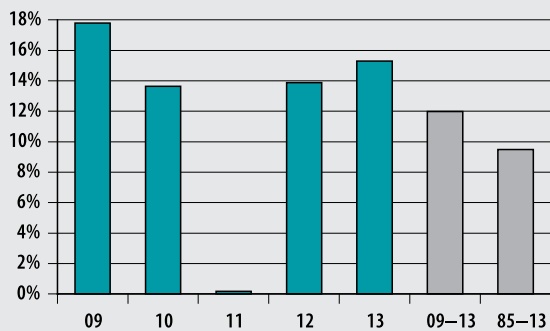
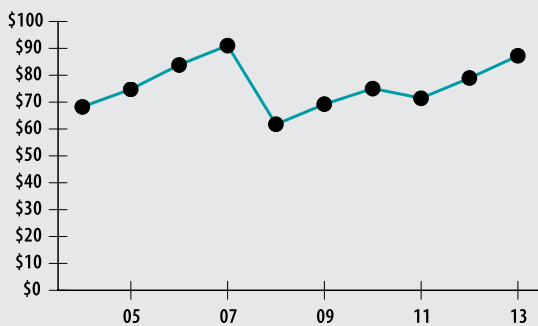
John J. McGinn (Chairperson),  
Charles Gessner, Paul Jalbert,  
Robert F. Peck, Jr., Esq., Calvin R. Powers

**Board Administrator**

Matthew P. Barrett

**Board Meeting**

Varies

**FUNDED RATIO (1987-2013)**

**INVESTMENT RETURN (2009-2013, 5 YEAR AND 29 YEAR AVERAGES)**

**ASSET GROWTH (2004-2013) (MARKET VALUE IN MILLIONS)**

**INVESTMENT RETURN HISTORY**

**29 years 2013**  
9.49%

**28 years 2012**  
9.29%

**27 years 2011**  
9.12%

**10 years 2013**  
7.70%

**10 years 2012**  
8.70%

**10 years 2011**  
6.30%

**5 years 2013**  
11.98%

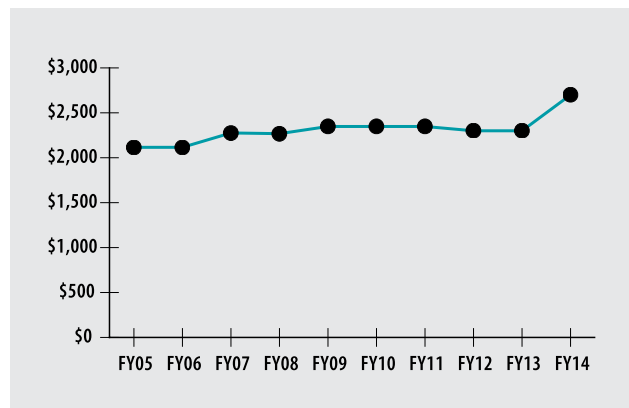
**5 years 2012**  
1.51%

**5 years 2011**  
1.18%

**ACTUARIAL**

▶ Funded Ratio	73.7%
▶ Date of Last Valuation	01/12
▶ Actuary	Stone Consulting
▶ Assumed Rate of Return	8.00%
▶ Funding Schedule	4.0% Increasing
▶ Year Fully Funded	2037
▶ Unfunded Liability	\$28.4 M
▶ Total Pension Appropriation (Fiscal 2014)	\$2.7 M

	ACTIVE	RETIRED
▶ Number of Members	339	332
▶ Total Payroll/Benefit	\$16.6 M	\$7.0 M
▶ Average Salary/Benefit	\$48,900	\$21,000
▶ Average Age	49	73
▶ Average Service	12.4 years	NA

**10-YEAR HISTORY OF APPROPRIATIONS (IN THOUSANDS)**

**EARNED INCOME OF DISABILITY RETIREES (2012)**

▶ Number of Disability Retirees	20
▶ Number Who Reported Earnings	7
▶ Number of Excess Earners	0
▶ Total Amount of Refund Due	\$0

▶ 2013 Return	15.29%
▶ 2013 Market Value	\$87.2 M
▶ 2009-2013 (Annualized)	11.98%
▶ 1985-2013 (Annualized)	9.49%

**Board Members**

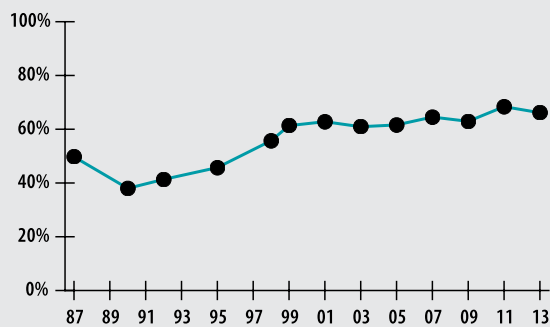
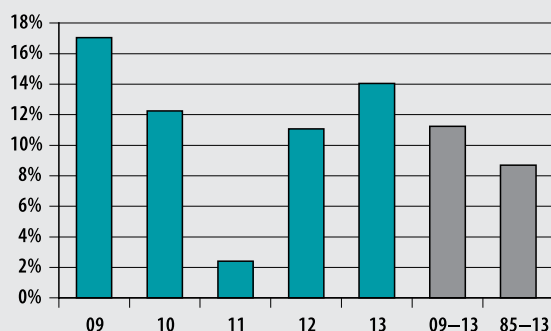
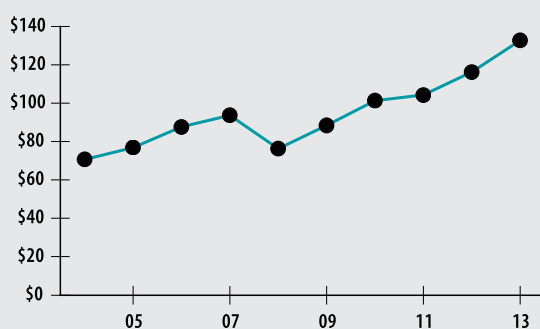
Gregory P. Brewster (Chairperson),  
Thomas J. Abel, Christopher M. Sandini, Sr.,  
Diane Smith, William S. Taylor

**Board Administrator**

Margaret R. Shea

**Board Meeting**

Varies

**FUNDED RATIO (1987-2013)**

**INVESTMENT RETURN (2009-2013, 5 YEAR AND 29 YEAR AVERAGES)**

**ASSET GROWTH (2004-2013) (MARKET VALUE IN MILLIONS)**

**INVESTMENT RETURN HISTORY**
**29 years 2013**

8.70%

**28 years 2012**

8.52%

**27 years 2011**

8.42%

**10 years 2013**

7.01%

**10 years 2012**

7.57%

**10 years 2011**

5.77%

**5 years 2013**

11.25%

**5 years 2012**

3.50%

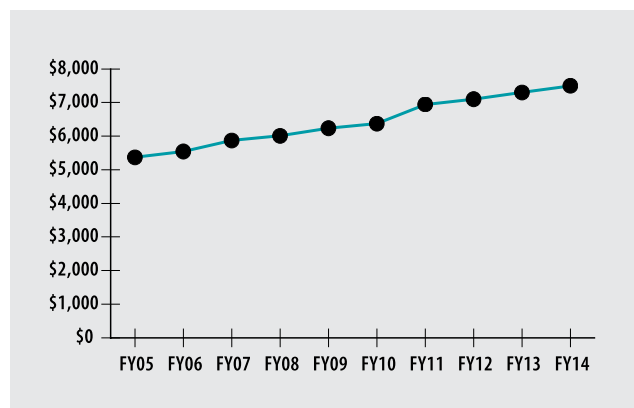
**5 years 2011**

2.69%

**ACTUARIAL**

▶ Funded Ratio	66.2%
▶ Date of Last Valuation	01/13
▶ Actuary	The Segal Company
▶ Assumed Rate of Return	8.00%
▶ Funding Schedule	3.1% Increasing
▶ Year Fully Funded	2027
▶ Unfunded Liability	\$61.1 M
▶ Total Pension Appropriation (Fiscal 2014)	\$7.5 M

	ACTIVE	RETIRED
▶ Number of Members	689	357
▶ Total Payroll/Benefit	\$31.8 M	\$9.3 M
▶ Average Salary/Benefit	\$46,200	\$26,000
▶ Average Age	46	72
▶ Average Service	11.5 years	NA

**10-YEAR HISTORY OF APPROPRIATIONS (IN THOUSANDS)**

**EARNED INCOME OF DISABILITY RETIREES (2012)**

▶ Number of Disability Retirees	33
▶ Number Who Reported Earnings	7
▶ Number of Excess Earners	0
▶ Total Amount of Refund Due	\$0

▶ 2013 Return	14.05%
▶ 2013 Market Value	\$132.7 M
▶ 2009-2013 (Annualized)	11.25%
▶ 1985-2013 (Annualized)	8.70%

**Board Members**

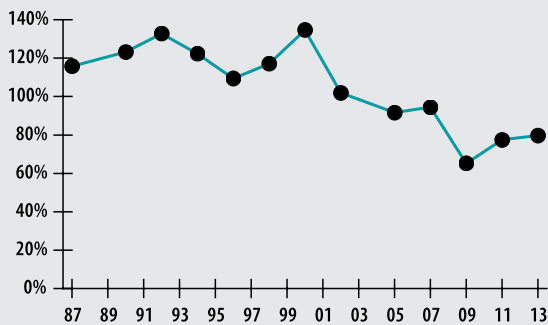
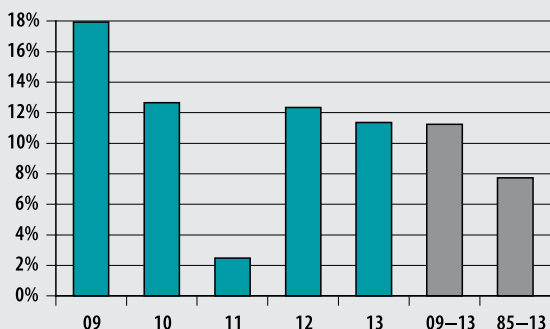
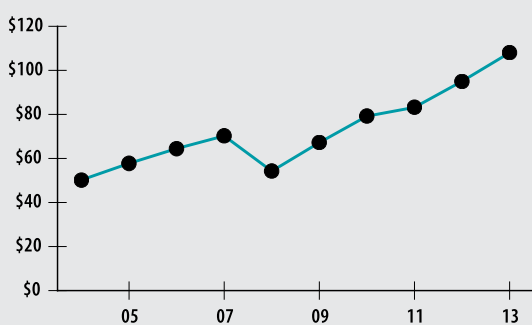
Andris Silins (Chairperson),  
Michael Fitzmaurice, Ronald A. Homer,  
Paul T. Hynes, Esq., Antonio Torres

**Board Administrator**

Joseph M. Petty

**Board Meeting**

Second Tuesday of each month at 1:30 pm

**FUNDED RATIO (1987-2013)**

**INVESTMENT RETURN (2009-2013, 5 YEAR AND 29 YEAR AVERAGES)**

**ASSET GROWTH (2004-2013) (MARKET VALUE IN MILLIONS)**

**INVESTMENT RETURN HISTORY**
**29 years 2013**

7.73%

**28 years 2012**

7.60%

**27 years 2011**

7.43%

**10 years 2013**

6.05%

**10 years 2012**

6.60%

**10 years 2011**

4.74%

**5 years 2013**

11.25%

**5 years 2012**

2.89%

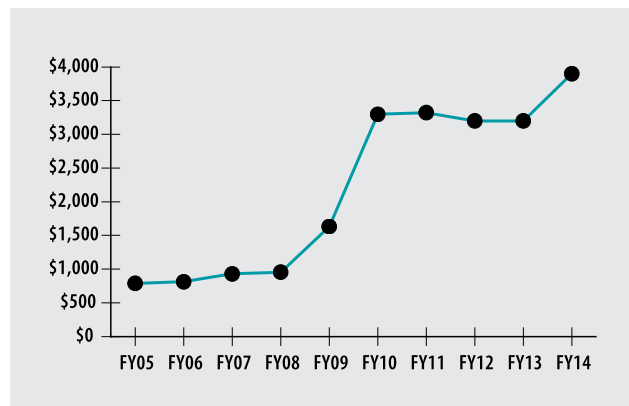
**5 years 2011**

1.96%

**ACTUARIAL**

▶ Funded Ratio	79.7%
▶ Date of Last Valuation	01/13
▶ Actuary	Stone Consulting
▶ Assumed Rate of Return	7.88%
▶ Funding Schedule	Level
▶ Year Fully Funded	2022
▶ Unfunded Liability	\$24.1 M
▶ Total Pension Appropriation (Fiscal 2014)	\$3.9 M

	ACTIVE	RETIRED
▶ Number of Members	328	117
▶ Total Payroll/Benefit	\$28.0 M	\$4.1 M
▶ Average Salary/Benefit	\$85,500	\$35,100
▶ Average Age	50	70
▶ Average Service	15.0 years	NA

**10-YEAR HISTORY OF APPROPRIATIONS (IN THOUSANDS)**

**EARNED INCOME OF DISABILITY RETIREES (2012)**

▶ Number of Disability Retirees	2
▶ Number Who Reported Earnings	0
▶ Number of Excess Earners	0
▶ Total Amount of Refund Due	\$0

▶ 2013 Return	11.36%
▶ 2013 Market Value	\$108.0 M
▶ 2009-2013 (Annualized)	11.25%
▶ 1985-2013 (Annualized)	7.73%



**Board Members**

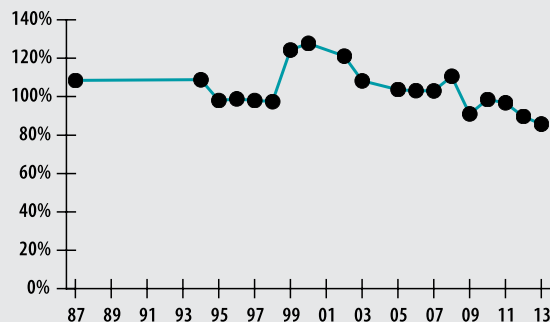
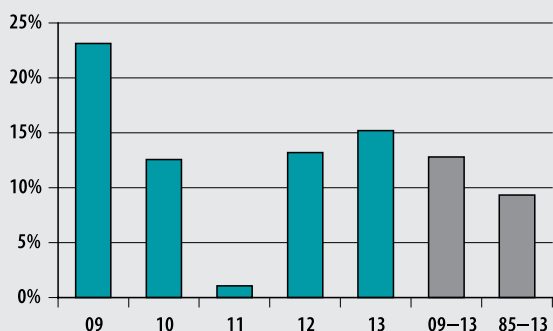
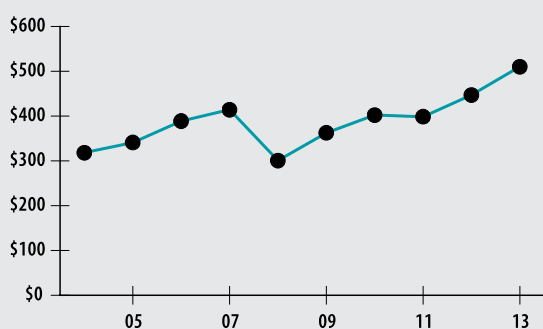
James P. Costello (Chairperson),  
Michael A. Grieco, Philip H. Mallett,  
John P. Pranckevicius, Betsy Taylor

**Board Administrator**

Irene E. Moran

**Board Meeting**

Last Thursday of the month

**FUNDED RATIO (1987-2013)**

**INVESTMENT RETURN (2009-2013, 5 YEAR AND 29 YEAR AVERAGES)**

**ASSET GROWTH (2004-2013) (MARKET VALUE IN MILLIONS)**

**INVESTMENT RETURN HISTORY**
**29 years 2013**

9.34%

**28 years 2012**

9.13%

**27 years 2011**

8.99%

**10 years 2013**

7.31%

**10 years 2012**

7.93%

**10 years 2011**

5.71%

**5 years 2013**

12.82%

**5 years 2012**

3.11%

**5 years 2011**

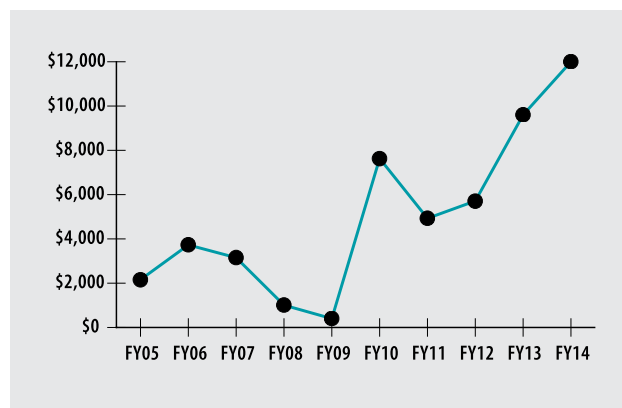
2.12%

**ACTUARIAL**

▶ Funded Ratio	85.7%
▶ Date of Last Valuation	01/13
▶ Actuary	Stone Consulting
▶ Assumed Rate of Return	7.63%
▶ Funding Schedule	Frozen Entry Age*
▶ Year Fully Funded	NA
▶ Unfunded Liability	\$72.4 M
▶ Total Pension Appropriation (Fiscal 2014)	\$12.0 M

	ACTIVE	RETIRED
▶ Number of Members	1,130	655
▶ Total Payroll/Benefit	\$86.7 M	\$22.2 M
▶ Average Salary/Benefit	\$76,800	\$33,900
▶ Average Age	48	69
▶ Average Service	14.8 years	NA

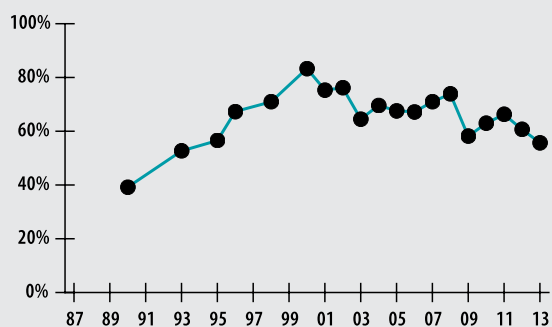
\*by statute

**10-YEAR HISTORY OF APPROPRIATIONS (IN THOUSANDS)**

**EARNED INCOME OF DISABILITY RETIREES (2012)**

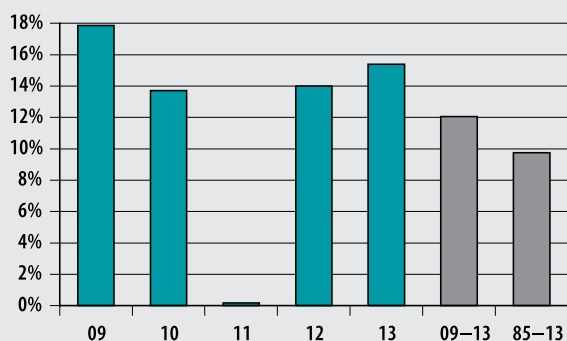
▶ Number of Disability Retirees	50
▶ Number Who Reported Earnings	14
▶ Number of Excess Earners	0
▶ Total Amount of Refund Due	\$0

▶ 2013 Return	15.21%
▶ 2013 Market Value	\$509.7 M
▶ 2009-2013 (Annualized)	12.82%
▶ 1985-2013 (Annualized)	9.34%

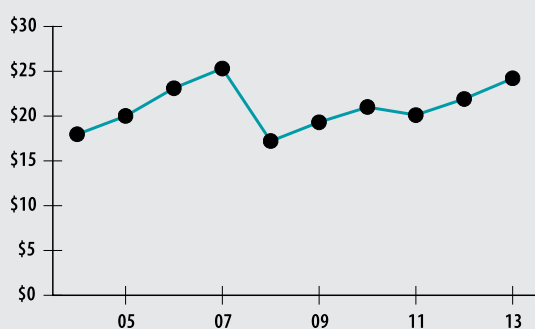
### FUNDED RATIO (1987-2013)



### INVESTMENT RETURN (2009-2013, 5 YEAR AND 29 YEAR AVERAGES)



### ASSET GROWTH (2004-2013) (MARKET VALUE IN BILLIONS)



### INVESTMENT RETURN HISTORY

**29 years 2013**  
9.75%

**28 years 2012**  
9.55%

**27 years 2011**  
9.39%

**10 years 2013**  
7.72%

**10 years 2012**  
8.71%

**10 years 2011**  
6.29%

**5 years 2013**  
12.05%

**5 years 2012**  
1.52%

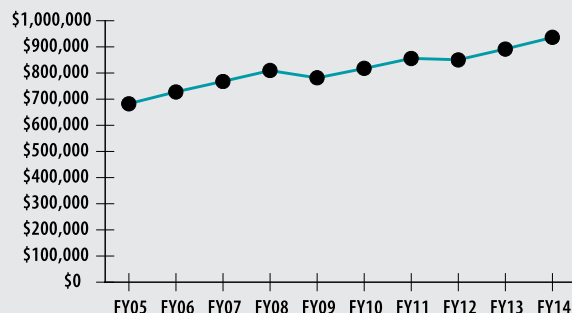
**5 years 2011**  
1.17%

## ACTUARIAL

▶ Funded Ratio	55.7%
▶ Date of Last Valuation	01/13
▶ Actuary	PERAC
▶ Assumed Rate of Return	8.00%
▶ Funding Schedule	Varies Total Increasing
▶ Year Fully Funded	2036
▶ Unfunded Liability	\$17.3 B
▶ Total Pension Appropriation (Fiscal 2014)	\$935.5 M

	ACTIVE	RETIRED
▶ Number of Members	87,765	59,019
▶ Total Payroll/Benefit	\$5.8B	\$2.4 B
▶ Average Salary/Benefit	\$65,900	\$40,300
▶ Average Age	44	71
▶ Average Service	12.9 years	NA

## 10-YEAR HISTORY OF APPROPRIATIONS (IN THOUSANDS)



## EARNED INCOME OF DISABILITY RETIREES (2012)

▶ Number of Disability Retirees	745
▶ Number Who Reported Earnings	119
▶ Number of Excess Earners	1
▶ Total Amount of Refund Due	\$15,277

▶ 2013 Return	15.40%
▶ 2013 Market Value	\$24.2 B
▶ 2009-2013 (Annualized)	12.05%
▶ 1985-2013 (Annualized)	9.75%

**Board Members**

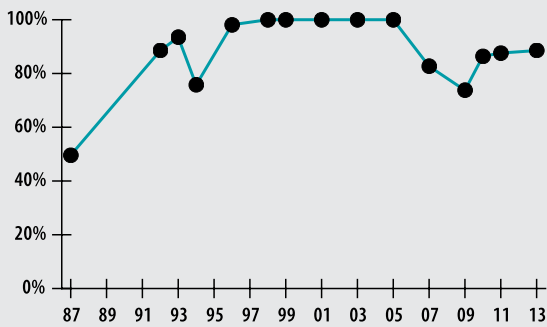
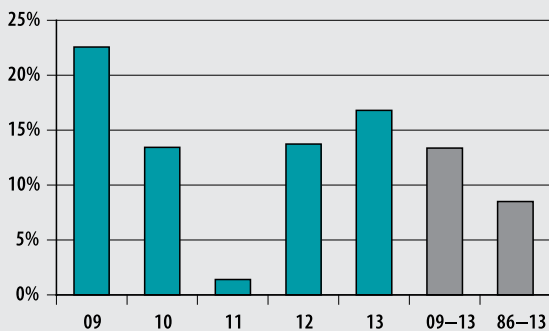
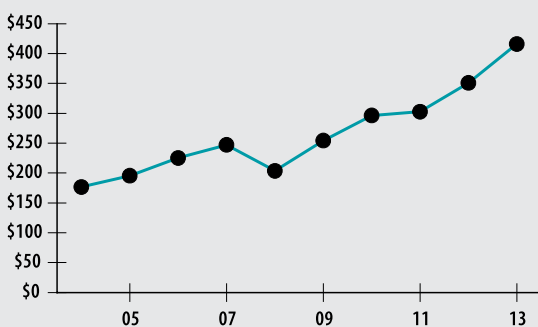
James M. Fleming, Esq. (Chairperson),  
Thomas J. Durkin, Joseph C. Foti,  
Kevin McKenna, Frank Zecha

**Board Administrator**

Sheryl C. Trezise

**Board Meeting**

Last Thursday of the month,  
unless otherwise posted

**FUNDED RATIO (1987-2013)**

**INVESTMENT RETURN (2009-2013, 5 YEAR AND 28 YEAR AVERAGES)**

**ASSET GROWTH (2004-2013) (MARKET VALUE IN MILLIONS)**

**INVESTMENT RETURN HISTORY**
**28 years 2013**

8.51%

**27 years 2012**

8.21%

**26 years 2011**

8.00%

**10 years 2013**

8.01%

**10 years 2012**

8.70%

**10 years 2011**

6.63%

**5 years 2013**

13.38%

**5 years 2012**

4.51%

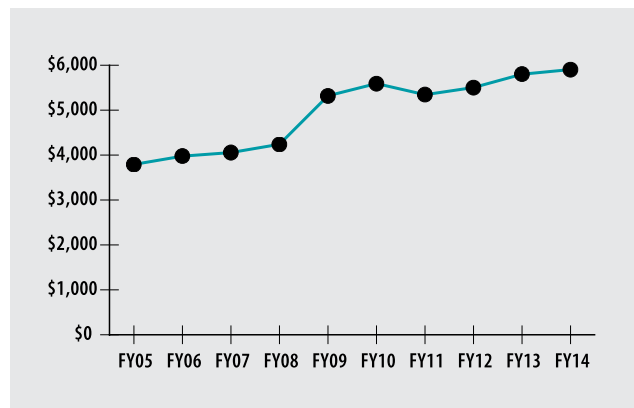
**5 years 2011**

3.54%

**ACTUARIAL**

▶ Funded Ratio	88.6%
▶ Date of Last Valuation	01/13
▶ Actuary	The Segal Company
▶ Assumed Rate of Return	8.00%
▶ Funding Schedule	4.5% Increasing
▶ Year Fully Funded	2024
▶ Unfunded Liability	\$43.8M
▶ Total Pension Appropriation (Fiscal 2014)	\$5.9 M

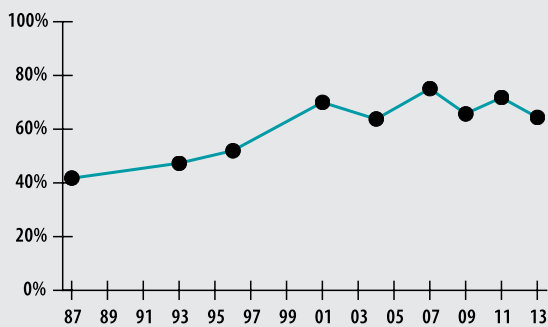
	ACTIVE	RETIRED
▶ Number of Members	1,091	397
▶ Total Payroll/Benefit	\$80.9 M	\$11.1 M
▶ Average Salary/Benefit	\$74,100	\$27,900
▶ Average Age	52	NA
▶ Average Service	18.0 years	NA

**10-YEAR HISTORY OF APPROPRIATIONS (IN THOUSANDS)**

**EARNED INCOME OF DISABILITY RETIREES (2012)**

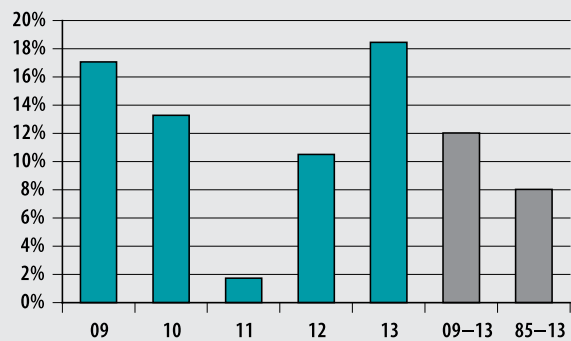
▶ Number of Disability Retirees	56
▶ Number Who Reported Earnings	14
▶ Number of Excess Earners	0
▶ Total Amount of Refund Due	\$0

▶ 2013 Return	16.82%
▶ 2013 Market Value	\$416.0 M
▶ 2009-2013 (Annualized)	13.38%
▶ 1986-2013 (Annualized)	8.51%

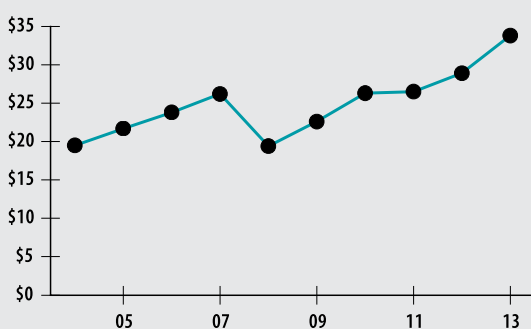
#### FUNDED RATIO (1987-2013)



#### INVESTMENT RETURN (2009-2013, 5 YEAR AND 29 YEAR AVERAGES)



#### ASSET GROWTH (2004-2013) (MARKET VALUE IN MILLIONS)



#### INVESTMENT RETURN HISTORY

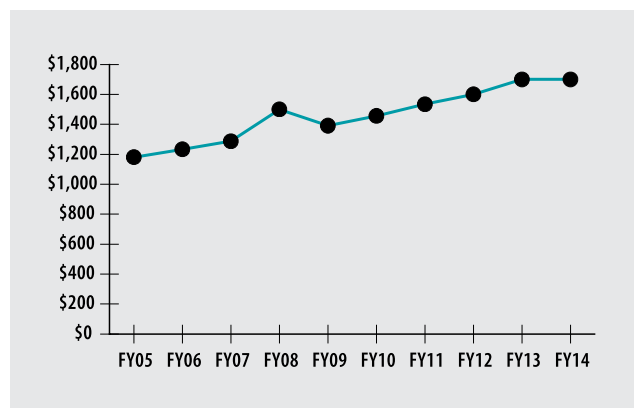
<b>29 years 2013</b> 8.05%	<b>28 years 2012</b> 7.70%	<b>27 years 2011</b> 7.59%
<b>10 years 2013</b> 6.31%	<b>10 years 2012</b> 6.41%	<b>10 years 2011</b> 5.15%
<b>5 years 2013</b> 12.05%	<b>5 years 2012</b> 1.75%	<b>5 years 2011</b> 1.46%

#### ACTUARIAL

▶ Funded Ratio	64.4%
▶ Date of Last Valuation	01/13
▶ Actuary	PERAC
▶ Assumed Rate of Return	7.75%
▶ Funding Schedule	6.0% Total Increasing
▶ Year Fully Funded	2031
▶ Unfunded Liability	\$15.6 M
▶ Total Pension Appropriation (Fiscal 2014)	\$1.7 M

	ACTIVE	RETIRED
▶ Number of Members	186	98
▶ Total Payroll/Benefit	\$7.9 M	\$2.3 M
▶ Average Salary/Benefit	\$42,600	\$23,800
▶ Average Age	48	72
▶ Average Service	10.8 years	NA

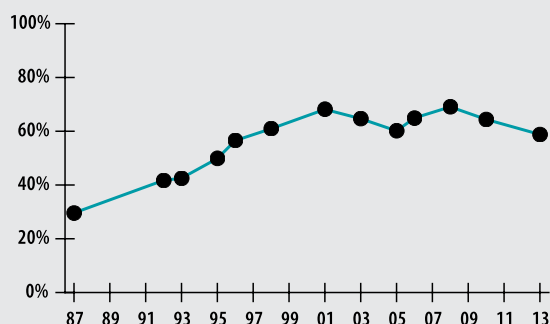
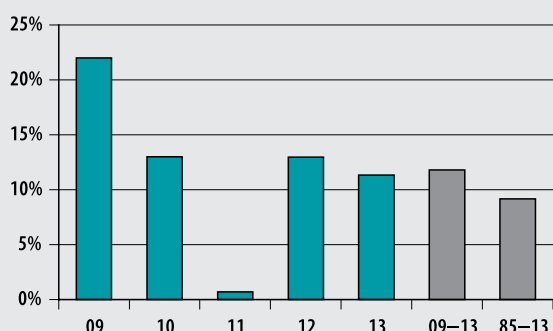
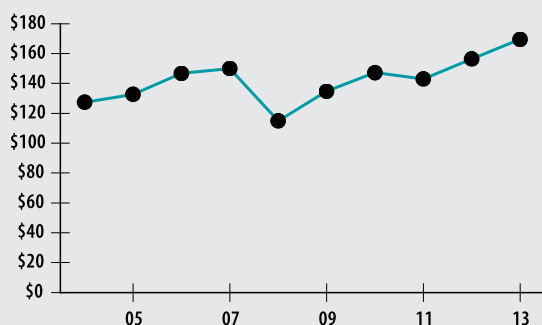
#### 10-YEAR HISTORY OF APPROPRIATIONS (IN THOUSANDS)



#### EARNED INCOME OF DISABILITY RETIREES (2012)

▶ Number of Disability Retirees	9
▶ Number Who Reported Earnings	4
▶ Number of Excess Earners	0
▶ Total Amount of Refund Due	\$0

▶ 2013 Return	18.46%
▶ 2013 Market Value	\$33.8 M
▶ 2009-2013 (Annualized)	12.05%
▶ 1985-2013 (Annualized)	8.05%

**FUNDED RATIO (1987-2013)**

**INVESTMENT RETURN (2009-2013, 5 YEAR AND 29 YEAR AVERAGES)**

**ASSET GROWTH (2004-2013) (MARKET VALUE IN MILLIONS)**

**INVESTMENT RETURN HISTORY**

**29 years 2013**  
9.19%

**28 years 2012**  
9.11%

**27 years 2011**  
8.97%

**10 years 2013**  
7.00%

**10 years 2012**  
7.85%

**10 years 2011**  
5.78%

**5 years 2013**  
11.81%

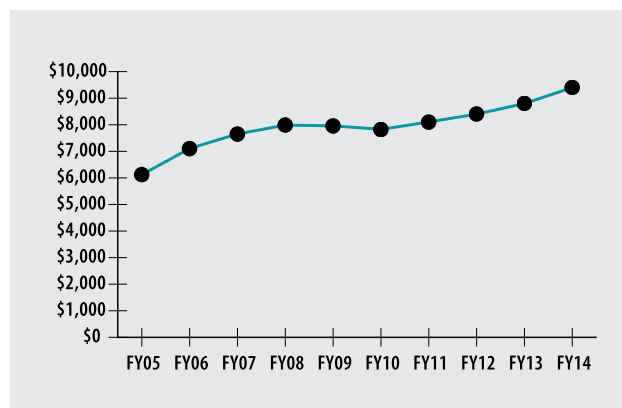
**5 years 2012**  
4.00%

**5 years 2011**  
2.85%

**ACTUARIAL**

▶ Funded Ratio	58.8%
▶ Date of Last Valuation	01/13
▶ Actuary	Sherman Actuarial Services, LLC
▶ Assumed Rate of Return	7.50%
▶ Funding Schedule	4.0% Increasing Phase-in
▶ Year Fully Funded	2038
▶ Unfunded Liability	\$106.3 M
▶ Total Pension Appropriation (Fiscal 2014)	\$9.4 M

	ACTIVE	RETIRED
▶ Number of Members	682	592
▶ Total Payroll/Benefit	\$35.2 M	\$15.4 M
▶ Average Salary/Benefit	\$51,600	\$25,900
▶ Average Age	NA	76
▶ Average Service	NA	NA

**10-YEAR HISTORY OF APPROPRIATIONS (IN THOUSANDS)**

**EARNED INCOME OF DISABILITY RETIREES (2012)**

▶ Number of Disability Retirees	109
▶ Number Who Reported Earnings	16
▶ Number of Excess Earners	1
▶ Total Amount of Refund Due	\$2,337

▶ 2013 Return	11.36%
▶ 2013 Market Value	\$169.5 M
▶ 2009-2013 (Annualized)	11.81%
▶ 1985-2013 (Annualized)	9.19%

## Melrose

City Hall  
562 Main Street  
Melrose, MA 02176  
Phone 781-979-4151  
Fax 781-979-4206

### Board Members

Patrick D. Dello Russo (Chairperson),  
Scott Colborne, Michael Lindstrom,  
Michael L. Lyle, Richard E. Pitts

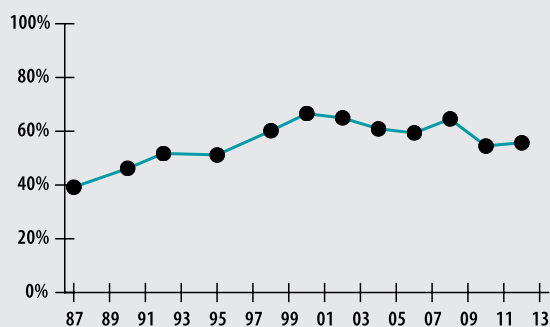
### Board Director

Adam Travinski

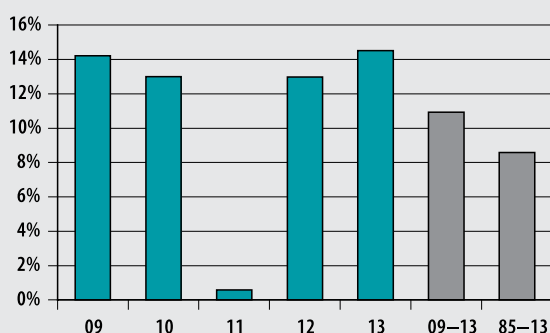
### Board Meeting

Usually the last Wednesday of each month

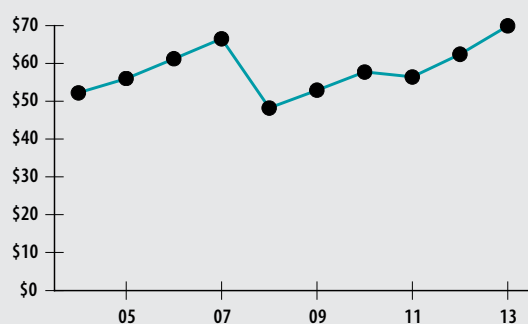
### FUNDED RATIO (1987-2013)



### INVESTMENT RETURN (2009-2013, 5 YEAR AND 29 YEAR AVERAGES)



### ASSET GROWTH (2004-2013) (MARKET VALUE IN MILLIONS)



### INVESTMENT RETURN HISTORY

#### 29 years 2013

8.59%

#### 28 years 2012

8.39%

#### 27 years 2011

8.22%

#### 10 years 2013

6.43%

#### 10 years 2012

6.76%

#### 10 years 2011

4.85%

#### 5 years 2013

10.93%

#### 5 years 2012

1.43%

#### 5 years 2011

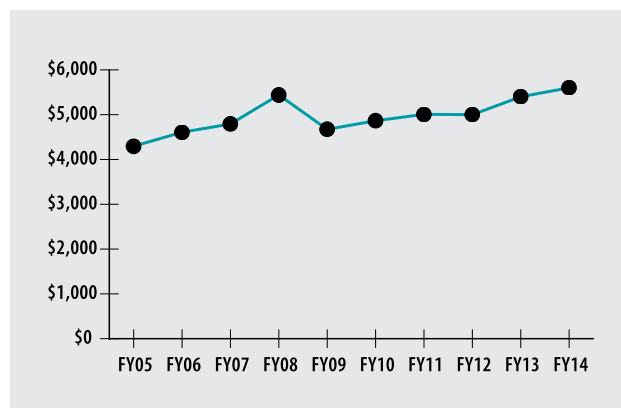
1.09%

## ACTUARIAL

▶ Funded Ratio	55.7%
▶ Date of Last Valuation	01/12
▶ Actuary	Stone Consulting
▶ Assumed Rate of Return	8.00%
▶ Funding Schedule	3.31% Increasing
▶ Year Fully Funded	2030
▶ Unfunded Liability	\$49.4 M
▶ Total Pension Appropriation (Fiscal 2014)	\$5.6 M

	ACTIVE	RETIRED
▶ Number of Members	423	368
▶ Total Payroll/Benefit	\$17.3 M	\$7.6 M
▶ Average Salary/Benefit	\$41,000	\$20,800
▶ Average Age	48	74
▶ Average Service	10.5 years	NA

## 10-YEAR HISTORY OF APPROPRIATIONS (IN THOUSANDS)



## EARNED INCOME OF DISABILITY RETIREES (2012)

▶ Number of Disability Retirees	42
▶ Number Who Reported Earnings	14
▶ Number of Excess Earners	1
▶ Total Amount of Refund Due	\$3,562

▶ 2013 Return	14.52%
▶ 2013 Market Value	\$69.9 M
▶ 2009-2013 (Annualized)	10.93%
▶ 1985-2013 (Annualized)	8.59%

## Methuen

41 Pleasant Street  
Suite 303  
Methuen, MA 01844  
Phone 978-983-8620  
Fax 978-983-8972

### Board Members

Thomas J. Kelly (Chairperson),  
Robert J. DeLuca, Michael Hennessy,  
John T. Sheehy, Albert J. Trott, III

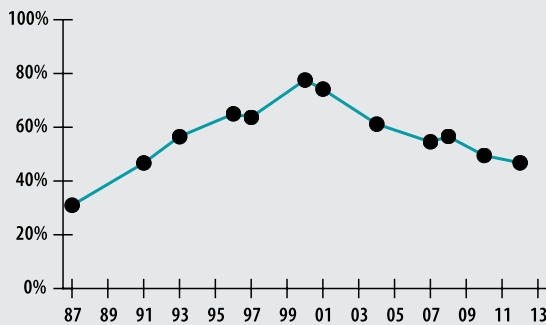
### Board Administrator

Terrylee Murphy

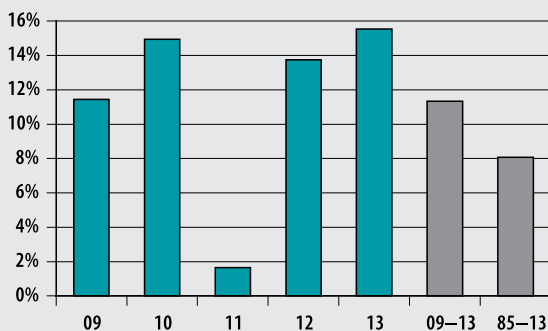
### Board Meeting

Last Thursday of each month at 9:30 am

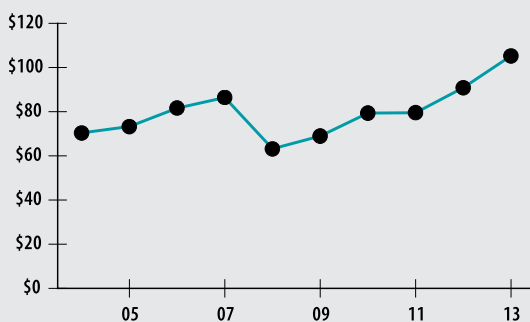
### FUNDED RATIO (1987-2013)



### INVESTMENT RETURN (2009-2013, 5 YEAR AND 29 YEAR AVERAGES)



### ASSET GROWTH (2004-2013) (MARKET VALUE IN MILLIONS)



### INVESTMENT RETURN HISTORY

**29 years 2013**  
8.08%

**28 years 2012**  
7.83%

**27 years 2011**  
7.61%

**10 years 2013**  
5.58%

**10 years 2012**  
6.10%

**10 years 2011**  
3.78%

**5 years 2013**  
11.34%

**5 years 2012**  
1.79%

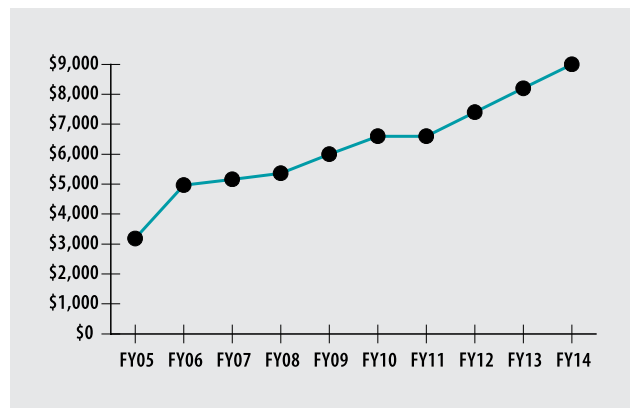
**5 years 2011**  
0.53%

## ACTUARIAL

▶ Funded Ratio	46.8%
▶ Date of Last Valuation	01/12
▶ Actuary	PERAC
▶ Assumed Rate of Return	8.00%
▶ Funding Schedule	4.0% Increasing Phase-in
▶ Year Fully Funded	2032
▶ Unfunded Liability	\$98.4 M
▶ Total Pension Appropriation (Fiscal 2014)	\$9.0 M

	ACTIVE	RETIRED
▶ Number of Members	603	421
▶ Total Payroll/Benefit	\$29.4 M	\$10.1 M
▶ Average Salary/Benefit	\$48,800	\$23,900
▶ Average Age	47	72
▶ Average Service	13.7 years	NA

## 10-YEAR HISTORY OF APPROPRIATIONS (IN THOUSANDS)

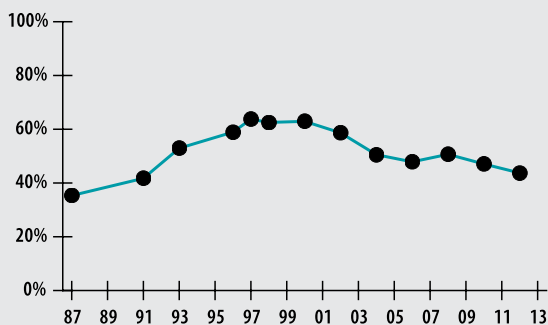


## EARNED INCOME OF DISABILITY RETIREES (2012)

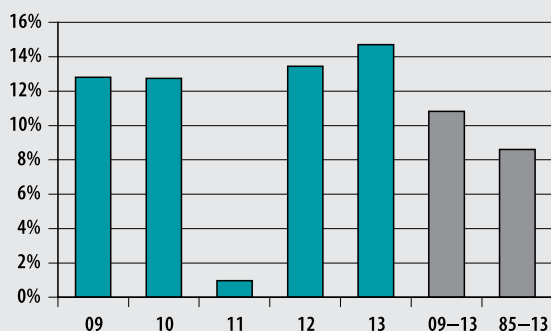
▶ Number of Disability Retirees	57
▶ Number Who Reported Earnings	12
▶ Number of Excess Earners	0
▶ Total Amount of Refund Due	\$0

▶ 2013 Return	15.55%
▶ 2013 Market Value	\$105.2 M
▶ 2009-2013 (Annualized)	11.34%
▶ 1985-2013 (Annualized)	8.08%

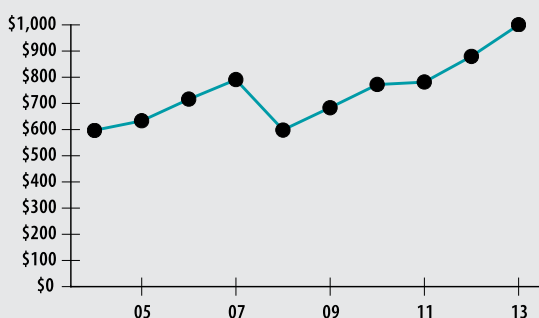
#### FUNDED RATIO (1987-2013)



#### INVESTMENT RETURN (2009-2013, 5 YEAR AND 29 YEAR AVERAGES)



#### ASSET GROWTH (2004-2013) (MARKET VALUE IN MILLIONS)



#### INVESTMENT RETURN HISTORY

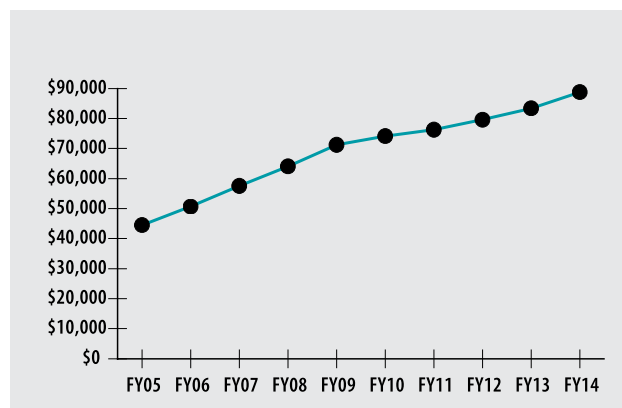
<b>29 years 2013</b> 8.60%	<b>28 years 2012</b> 8.39%	<b>27 years 2011</b> 8.21%
<b>10 years 2013</b> 6.58%	<b>10 years 2012</b> 6.24%	<b>10 years 2011</b> 4.42%
<b>5 years 2013</b> 10.82%	<b>5 years 2012</b> 1.93%	<b>5 years 2011</b> 1.43%

#### ACTUARIAL

▶ Funded Ratio	43.7%
▶ Date of Last Valuation	01/12
▶ Actuary	The Segal Company
▶ Assumed Rate of Return	8.00%
▶ Funding Schedule	4.0% Increasing Phase-in
▶ Year Fully Funded	2035
▶ Unfunded Liability	\$1.1 B
▶ Total Pension Appropriation (Fiscal 2014)	\$88.8 M

	ACTIVE	RETIRED
▶ Number of Members	8,979	4,886
▶ Total Payroll/Benefit	\$393.1 M	\$102.7 M
▶ Average Salary/Benefit	\$43,800	\$2,100
▶ Average Age	48	NA
▶ Average Service	11.4 years	NA

#### 10-YEAR HISTORY OF APPROPRIATIONS (IN THOUSANDS)



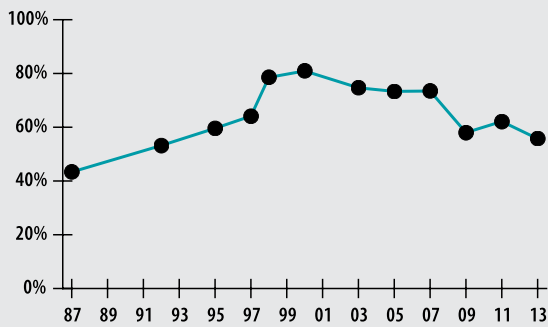
#### EARNED INCOME OF DISABILITY RETIREES (2012)

▶ Number of Disability Retirees	457
▶ Number Who Reported Earnings	119
▶ Number of Excess Earners	3
▶ Total Amount of Refund Due	\$12,909

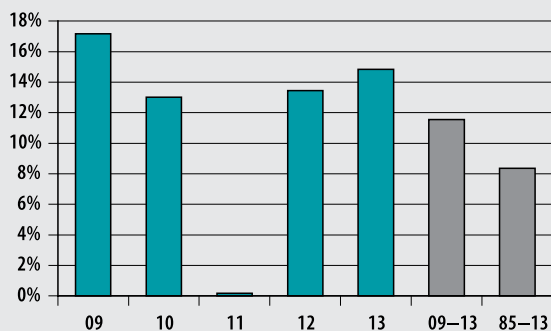
▶ 2013 Return	14.70%
▶ 2013 Market Value	\$1.0 B
▶ 2009-2013 (Annualized)	10.82%
▶ 1985-2013 (Annualized)	8.60%



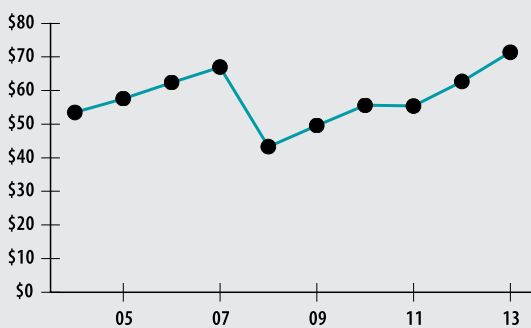
### FUNDED RATIO (1987-2013)



### INVESTMENT RETURN (2009-2013, 5 YEAR AND 29 YEAR AVERAGES)



### ASSET GROWTH (2004-2013) (MARKET VALUE IN MILLIONS)



### INVESTMENT RETURN HISTORY

<b>29 years 2013</b> 8.37%	<b>28 years 2012</b> 8.15%	<b>27 years 2011</b> 7.95%
<b>10 years 2013</b> 5.61%	<b>10 years 2012</b> 6.11%	<b>10 years 2011</b> 4.49%
<b>5 years 2013</b> 11.56%	<b>5 years 2012</b> 0.52%	<b>5 years 2011</b> -0.31%

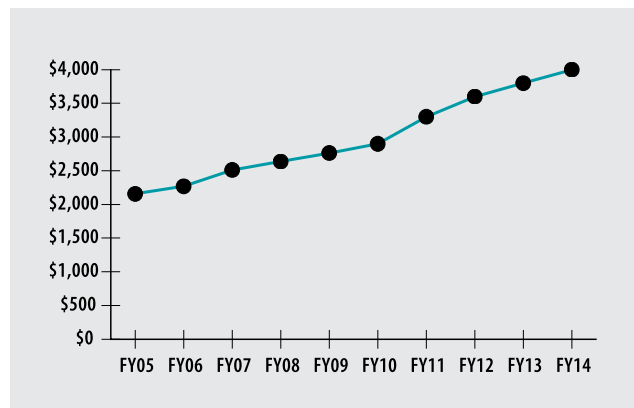
### ACTUARIAL

▶ Funded Ratio	55.8%
▶ Date of Last Valuation	01/13
▶ Actuary	PERAC
▶ Assumed Rate of Return	7.75%
▶ Funding Schedule	5.5% Total Increasing
▶ Year Fully Funded	2037
▶ Unfunded Liability	\$48.5 M
▶ Total Pension Appropriation (Fiscal 2014)	\$4.0 M

	ACTIVE	RETIRED
▶ Number of Members	451	271
▶ Total Payroll/Benefit	\$18.7 M	\$5.3 M
▶ Average Salary/Benefit	\$41,400	\$19,600
▶ Average Age	50	74
▶ Average Service	13.5 years	NA

### 10-YEAR HISTORY OF APPROPRIATIONS (IN THOUSANDS)



### EARNED INCOME OF DISABILITY RETIREES (2012)

▶ Number of Disability Retirees	30
▶ Number Who Reported Earnings	10
▶ Number of Excess Earners	0
▶ Total Amount of Refund Due	\$0

▶ 2013 Return	14.84%
▶ 2013 Market Value	\$71.4 M
▶ 2009-2013 (Annualized)	11.56%
▶ 1985-2013 (Annualized)	8.37%

## Milton

525 Canton Avenue  
Milton, MA 02186  
Phone 617-898-4887  
Fax 617-698-1540

### Board Members

Kevin J. Cleary (Chairperson),  
Robert J. Byron, Amy Dexter, John E. King,  
Richard J. Madigan

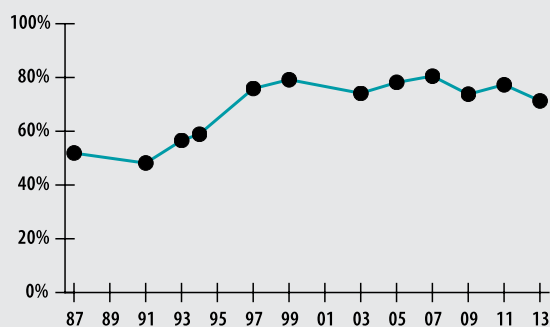
### Board Administrator

Kevin J. Cleary

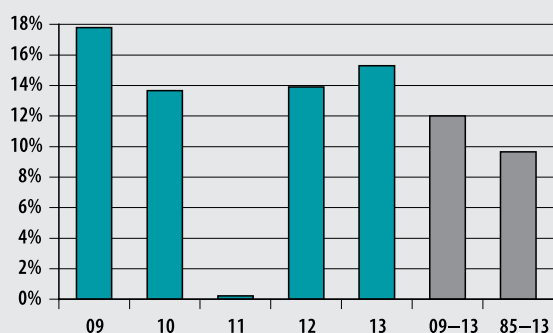
### Board Meeting

Last Thursday of each month at 3:30 pm

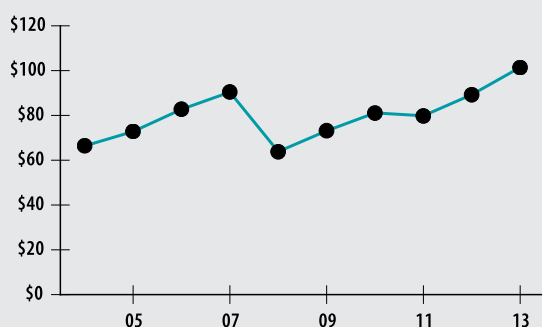
### FUNDED RATIO (1987-2013)



### INVESTMENT RETURN (2009-2013, 5 YEAR AND 29 YEAR AVERAGES)



### ASSET GROWTH (2004-2013) (MARKET VALUE IN MILLIONS)



### INVESTMENT RETURN HISTORY

**29 years 2013**  
9.66%

**28 years 2012**  
9.46%

**27 years 2011**  
9.30%

**10 years 2013**  
7.45%

**10 years 2012**  
8.37%

**10 years 2011**  
6.00%

**5 years 2013**  
12.00%

**5 years 2012**  
1.58%

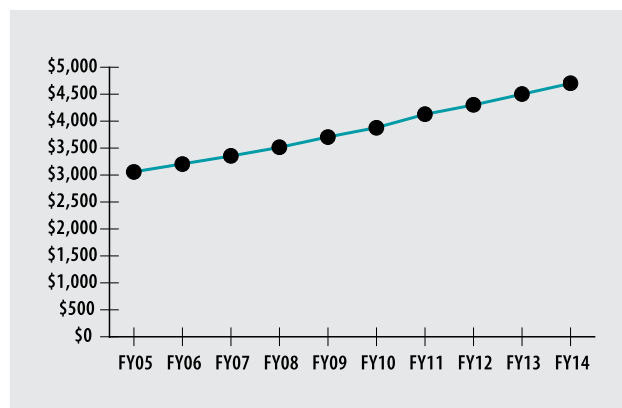
**5 years 2011**  
1.17%

## ACTUARIAL

▶ Funded Ratio	71.3%
▶ Date of Last Valuation	01/13
▶ Actuary	PERAC
▶ Assumed Rate of Return	7.75%
▶ Funding Schedule	6.0% Total Increasing
▶ Year Fully Funded	2025
▶ Unfunded Liability	\$35.0 M
▶ Total Pension Appropriation (Fiscal 2014)	\$4.7 M

	ACTIVE	RETIRED
▶ Number of Members	353	266
▶ Total Payroll/Benefit	\$19.2 M	\$7.0 M
▶ Average Salary/Benefit	\$54,300	\$26,400
▶ Average Age	47	74
▶ Average Service	12.5 years	NA

## 10-YEAR HISTORY OF APPROPRIATIONS (IN THOUSANDS)



## EARNED INCOME OF DISABILITY RETIREES (2012)

▶ Number of Disability Retirees	38
▶ Number Who Reported Earnings	8
▶ Number of Excess Earners	1
▶ Total Amount of Refund Due	\$109

▶ 2013 Return	15.30%
▶ 2013 Market Value	\$101.3 M
▶ 2009-2013 (Annualized)	12.00%
▶ 1985-2013 (Annualized)	9.66%

**Board Members**

Kevin F. Mahoney (Chairperson),  
Norman Cohen, Esq., Laurie A. Elliott  
Maria Oliveria, Elizabeth Rozan

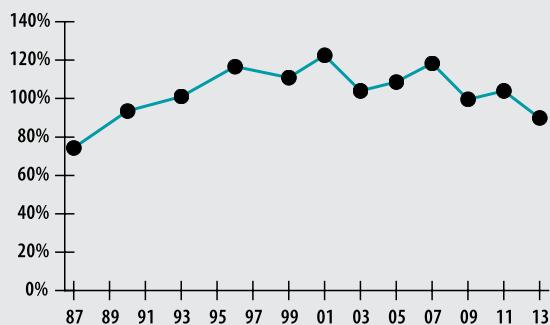
**Board Administrator**

Sandor Zapolin

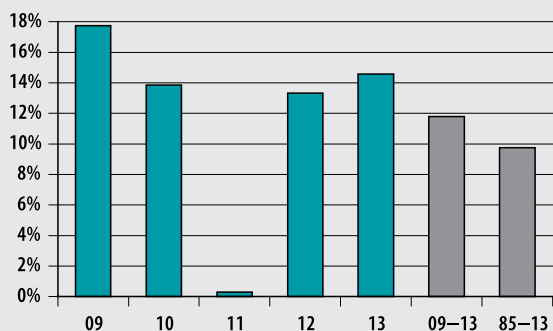
**Board Meeting**

Generally the fourth Thursday  
of each month

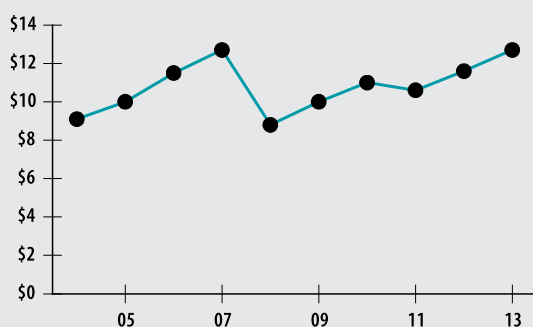
**FUNDED RATIO (1987-2013)**



**INVESTMENT RETURN (2009-2013, 5 YEAR AND 29 YEAR AVERAGES)**



**ASSET GROWTH (2004-2013) (MARKET VALUE IN MILLIONS)**



**INVESTMENT RETURN HISTORY**

**29 years 2013**  
9.76%

**28 years 2012**  
9.59%

**27 years 2011**  
9.46%

**10 years 2013**  
7.60%

**10 years 2012**  
8.68%

**10 years 2011**  
6.32%

**5 years 2013**  
11.79%

**5 years 2012**  
1.39%

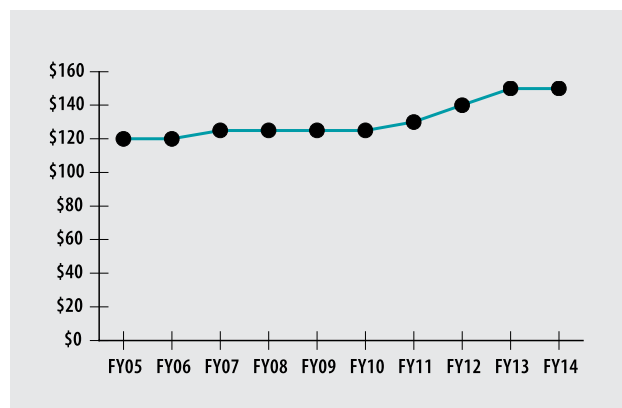
**5 years 2011**  
1.17%

**ACTUARIAL**

▶ Funded Ratio	89.9%
▶ Date of Last Valuation	01/13
▶ Actuary	PERAC
▶ Assumed Rate of Return	7.75%
▶ Funding Schedule	Level dollar
▶ Year Fully Funded	NA
▶ Unfunded Liability	\$1.3 M
▶ Total Pension Appropriation (Fiscal 2014)	\$150,000

	ACTIVE	RETIRED
▶ Number of Members	50	39
▶ Total Payroll/Benefit	\$2.3 M	\$853,000
▶ Average Salary/Benefit	\$46,800	\$21,900
▶ Average Age	47	74
▶ Average Service	9.1 years	NA

**10-YEAR HISTORY OF APPROPRIATIONS (IN THOUSANDS)**

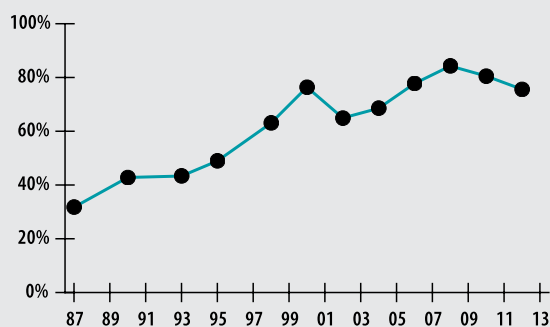


**EARNED INCOME OF DISABILITY RETIREES (2012)**

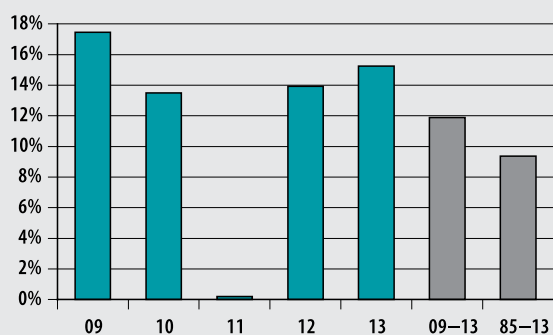
▶ Number of Disability Retirees	2
▶ Number Who Reported Earnings	0
▶ Number of Excess Earners	0
▶ Total Amount of Refund Due	\$0

▶ 2013 Return	14.59%
▶ 2013 Market Value	\$12.7 M
▶ 2009-2013 (Annualized)	11.79%
▶ 1985-2013 (Annualized)	9.76%

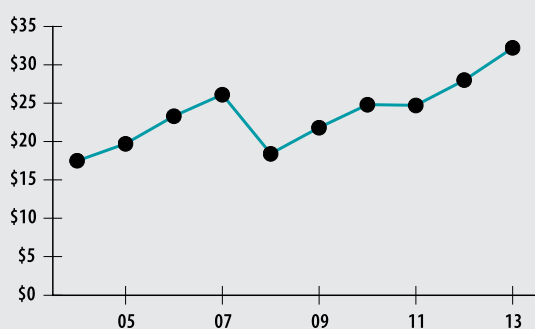
## FUNDED RATIO (1987-2013)



## INVESTMENT RETURN (2009-2013, 5 YEAR AND 29 YEAR AVERAGES)



## ASSET GROWTH (2004-2013) (MARKET VALUE IN MILLIONS)



## INVESTMENT RETURN HISTORY

**29 years 2013**  
9.38%

**28 years 2012**  
9.18%

**27 years 2011**  
9.01%

**10 years 2013**  
7.67%

**10 years 2012**  
8.66%

**10 years 2011**  
6.26%

**5 years 2013**  
11.90%

**5 years 2012**  
1.46%

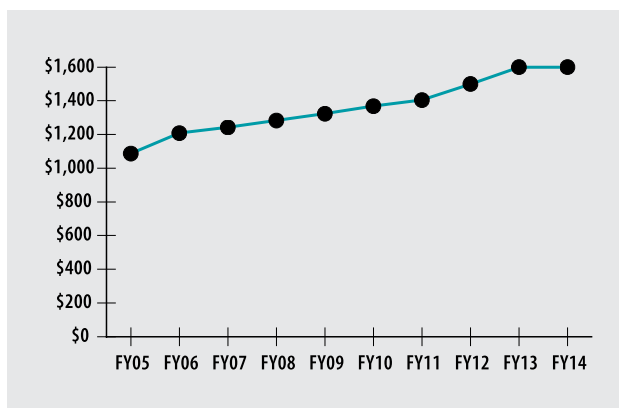
**5 years 2011**  
1.13%

## ACTUARIAL

▶ Funded Ratio	75.6%
▶ Date of Last Valuation	01/12
▶ Actuary	PERAC
▶ Assumed Rate of Return	8.00%
▶ Funding Schedule	1.0% Increasing
▶ Year Fully Funded	2025
▶ Unfunded Liability	\$8.7 M
▶ Total Pension Appropriation (Fiscal 2014)	\$1.6 M

	ACTIVE	RETIRED
▶ Number of Members	193	114
▶ Total Payroll/Benefit	\$5.9 M	\$1.9 M
▶ Average Salary/Benefit	\$30,700	\$16,300
▶ Average Age	48	72
▶ Average Service	11.9 years	NA

## 10-YEAR HISTORY OF APPROPRIATIONS (IN THOUSANDS)



## EARNED INCOME OF DISABILITY RETIREES (2012)

▶ Number of Disability Retirees	14
▶ Number Who Reported Earnings	2
▶ Number of Excess Earners	0
▶ Total Amount of Refund Due	\$0

▶ 2013 Return	15.26%
▶ 2013 Market Value	\$32.2 M
▶ 2009-2013 (Annualized)	11.90%
▶ 1985-2013 (Annualized)	9.38%

**Board Members**

Robert J. Drew (Chairperson),  
Virginia Cahill, David Given, Michael J.  
Melchiorri, B. Michael Reardon

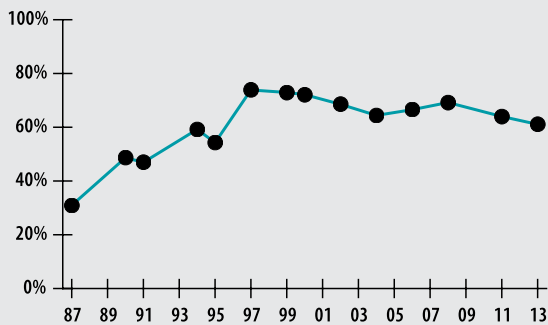
**Board Administrator**

Kathleen S. Bacon

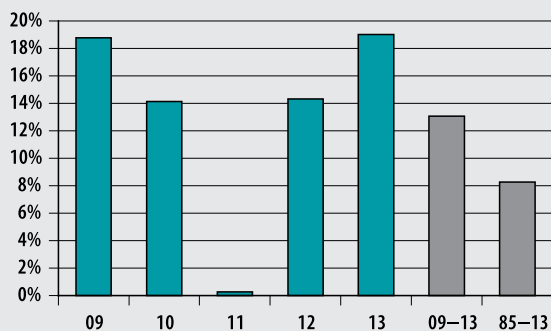
**Board Meeting**

Usually the last Wednesday of each month

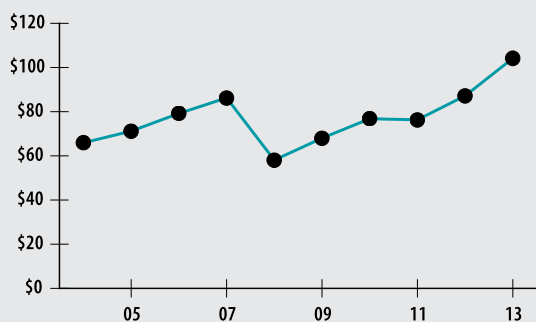
**FUNDED RATIO (1987-2013)**



**INVESTMENT RETURN (2009-2013, 5 YEAR AND 29 YEAR AVERAGES)**



**ASSET GROWTH (2004-2013) (MARKET VALUE IN MILLIONS)**



**INVESTMENT RETURN HISTORY**

**29 years 2013**  
8.28%

**28 years 2012**  
7.92%

**27 years 2011**  
7.69%

**10 years 2013**  
5.67%

**10 years 2012**  
5.59%

**10 years 2011**  
3.27%

**5 years 2013**  
13.09%

**5 years 2012**  
1.13%

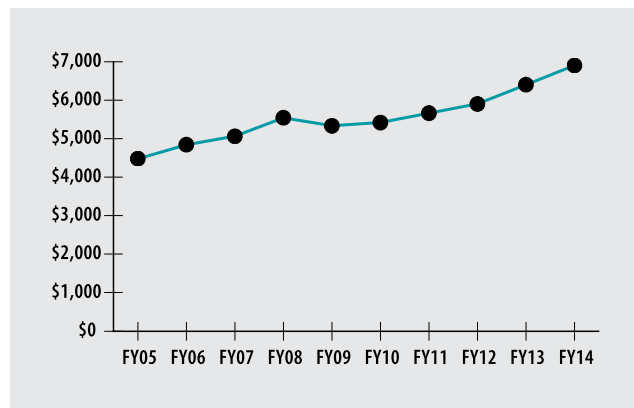
**5 years 2011**  
0.20%

**ACTUARIAL**

▶ Funded Ratio	61.1%
▶ Date of Last Valuation	01/13
▶ Actuary	The Segal Company
▶ Assumed Rate of Return	8.00%
▶ Funding Schedule	4.0% Increasing Phase-in
▶ Year Fully Funded	2030
▶ Unfunded Liability	\$65.6 M
▶ Total Pension Appropriation (Fiscal 2014)	\$6.9 M

	ACTIVE	RETIRED
▶ Number of Members	591	375
▶ Total Payroll/Benefit	\$32.2 M	\$9.1 M
▶ Average Salary/Benefit	\$54,500	\$24,400
▶ Average Age	47	NA
▶ Average Service	12.3 years	NA

**10-YEAR HISTORY OF APPROPRIATIONS (IN THOUSANDS)**



**EARNED INCOME OF DISABILITY RETIREES (2012)**

▶ Number of Disability Retirees	25
▶ Number Who Reported Earnings	8
▶ Number of Excess Earners	0
▶ Total Amount of Refund Due	\$0

▶ 2013 Return	19.02%
▶ 2013 Market Value	\$104.1 M
▶ 2009-2013 (Annualized)	13.09%
▶ 1985-2013 (Annualized)	8.28%

## Needham

Town Hall  
1471 Highland Avenue  
Needham, MA 02492-2605  
Phone 781-455-7500, Ext. 231  
Fax 781-449-4569

### Board Members

Evelyn M. Poness (Chairperson),  
Kathleen P. Fitzpatrick, John P. Krawiecki,  
Robert P. Mearls, Thomas A. Welch II

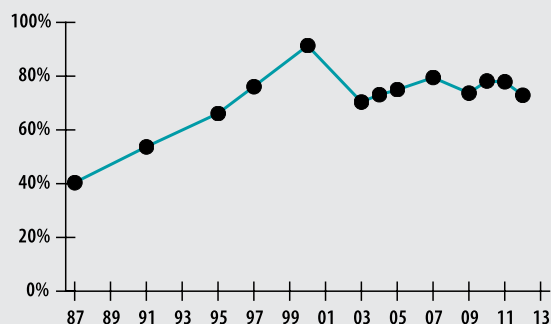
### Board Administrator

Juanita Hearn

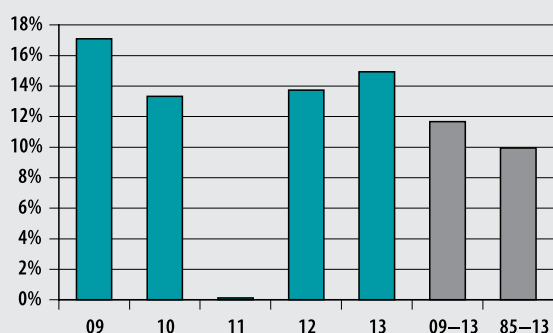
### Board Meeting

Usually second Wednesday of each  
month at 9:00 am

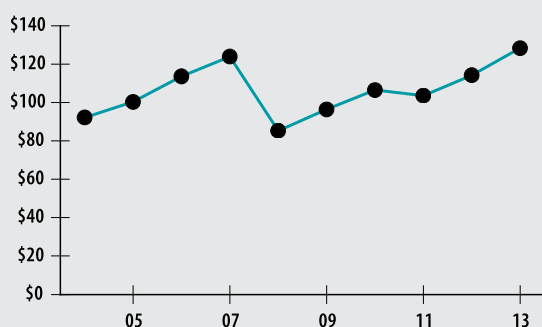
### FUNDED RATIO (1987-2013)



### INVESTMENT RETURN (2009-2013, 5 YEAR AND 29 YEAR AVERAGES)



### ASSET GROWTH (2004-2013) (MARKET VALUE IN MILLIONS)



### INVESTMENT RETURN HISTORY

#### 29 years 2013

9.95%

#### 28 years 2012

9.78%

#### 27 years 2011

9.64%

#### 10 years 2013

7.57%

#### 10 years 2012

8.56%

#### 10 years 2011

6.19%

#### 5 years 2013

11.68%

#### 5 years 2012

1.43%

#### 5 years 2011

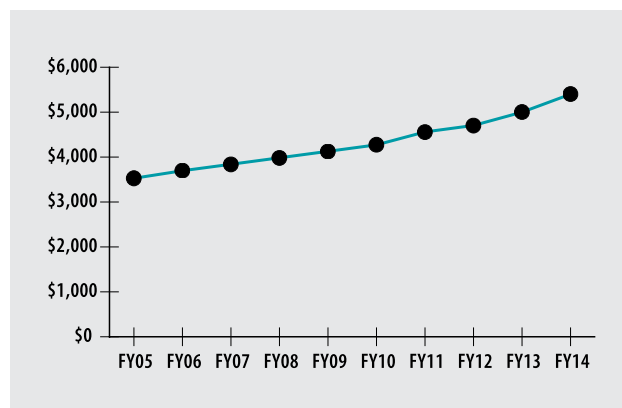
1.13%

## ACTUARIAL

▶ Funded Ratio	72.9%
▶ Date of Last Valuation	01/12
▶ Actuary	Buck Consultants
▶ Assumed Rate of Return	8.00%
▶ Funding Schedule	4.5% Increasing
▶ Year Fully Funded	2030
▶ Unfunded Liability	\$42.5 M
▶ Total Pension Appropriation (Fiscal 2014)	\$5.4 M

	ACTIVE	RETIRED
▶ Number of Members	644	473
▶ Total Payroll/Benefit	\$29.0 M	\$9.6 M
▶ Average Salary/Benefit	\$45,000	\$20,200
▶ Average Age	NA	77
▶ Average Service	NA	NA

## 10-YEAR HISTORY OF APPROPRIATIONS (IN THOUSANDS)



## EARNED INCOME OF DISABILITY RETIREES (2012)

▶ Number of Disability Retirees	31
▶ Number Who Reported Earnings	8
▶ Number of Excess Earners	0
▶ Total Amount of Refund Due	\$0

▶ 2013 Return	14.93%
▶ 2013 Market Value	\$128.3 M
▶ 2009-2013 (Annualized)	11.68%
▶ 1985-2013 (Annualized)	9.95%

## New Bedford

651 Orchard Street, #203A  
New Bedford, MA 02744-1008  
Phone 508-979-1538  
Fax 508-979-1799

### Board Members

Arthur J. Caron, Jr., Esq. (Chairperson),  
Paul M. Lestage, Sharon Thomas,  
Susan Mandra Thompson,  
Edward J. Wiley

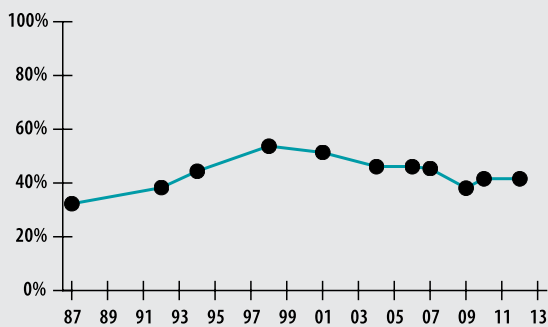
### Board Administrator

Gerard Arnaudet

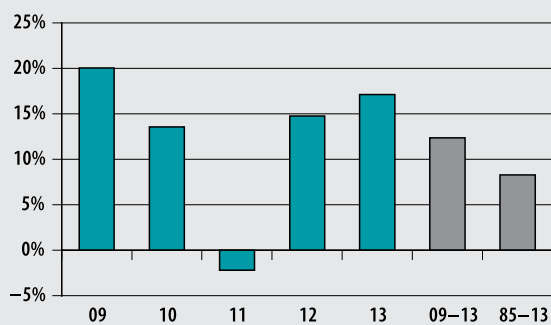
### Board Meeting

Usually last Thursday of each  
month at 9:00 am

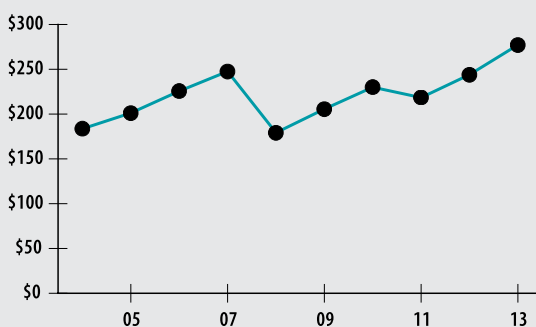
### FUNDED RATIO (1987-2013)



### INVESTMENT RETURN (2009-2013, 5 YEAR AND 29 YEAR AVERAGES)



### ASSET GROWTH (2004-2013) (MARKET VALUE IN MILLIONS)



### INVESTMENT RETURN HISTORY

**29 years 2013**  
8.29%

**28 years 2012**  
7.98%

**27 years 2011**  
7.74%

**10 years 2013**  
7.47%

**10 years 2012**  
8.07%

**10 years 2011**  
5.80%

**5 years 2013**  
12.38%

**5 years 2012**  
2.25%

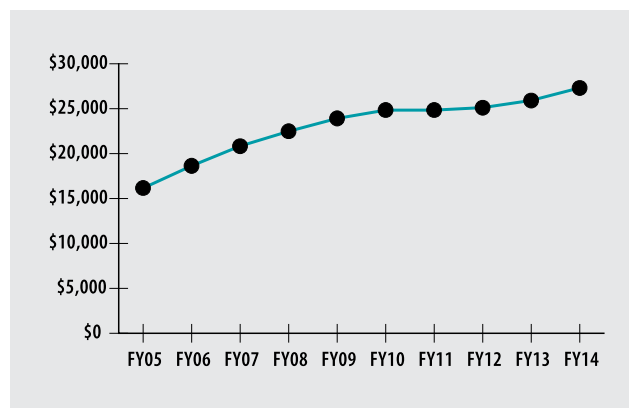
**5 years 2011**  
1.47%

## ACTUARIAL

▶ Funded Ratio	41.6%
▶ Date of Last Valuation	01/12
▶ Actuary	Sherman Actuarial Services, LLC
▶ Assumed Rate of Return	7.75%
▶ Funding Schedule	4.0% Increasing
▶ Year Fully Funded	2036
▶ Unfunded Liability	\$337.5 M
▶ Total Pension Appropriation (Fiscal 2014)	\$27.3 M

	ACTIVE	RETIRED
▶ Number of Members	1,917	1,774
▶ Total Payroll/Benefit	\$82.5 M	\$37.5 M
▶ Average Salary/Benefit	\$43,000	\$21,100
▶ Average Age	NA	73
▶ Average Service	NA	NA

## 10-YEAR HISTORY OF APPROPRIATIONS (IN THOUSANDS)

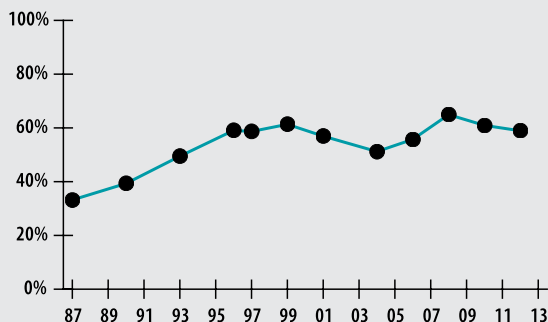


## EARNED INCOME OF DISABILITY RETIREES (2012)

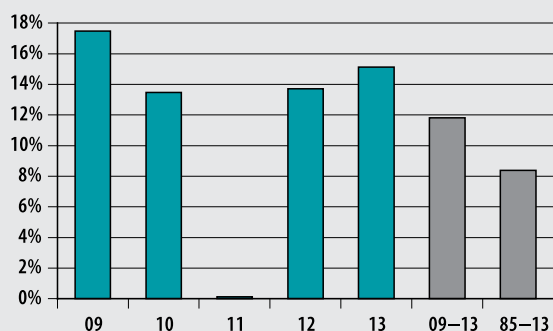
▶ Number of Disability Retirees	338
▶ Number Who Reported Earnings	78
▶ Number of Excess Earners	2
▶ Total Amount of Refund Due	\$10,070

▶ 2013 Return	17.15%
▶ 2013 Market Value	\$276.9 M
▶ 2009-2013 (Annualized)	12.38%
▶ 1985-2013 (Annualized)	8.29%

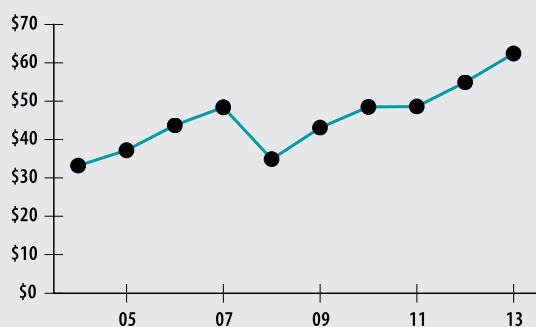
## FUNDED RATIO (1987-2013)



## INVESTMENT RETURN (2009-2013, 5 YEAR AND 29 YEAR AVERAGES)



## ASSET GROWTH (2004-2013) (MARKET VALUE IN MILLIONS)



## INVESTMENT RETURN HISTORY

**29 years 2013**  
8.39%

**28 years 2012**  
8.16%

**27 years 2011**  
7.96%

**10 years 2013**  
7.50%

**10 years 2012**  
8.06%

**10 years 2011**  
6.29%

**5 years 2013**  
11.81%

**5 years 2012**  
1.45%

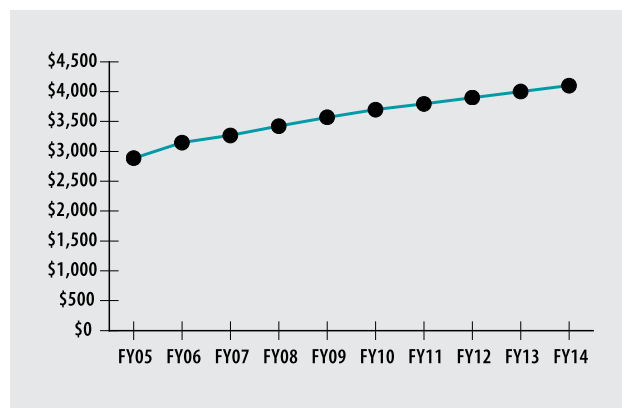
**5 years 2011**  
1.12%

## ACTUARIAL

▶ Funded Ratio	59.0%
▶ Date of Last Valuation	01/12
▶ Actuary	PERAC
▶ Assumed Rate of Return	8.00%
▶ Funding Schedule	2.7% Increasing
▶ Year Fully Funded	2038
▶ Unfunded Liability	\$36.1 M
▶ Total Pension Appropriation (Fiscal 2014)	\$4.1 M

	ACTIVE	RETIRED
▶ Number of Members	364	217
▶ Total Payroll/Benefit	\$15.1 M	\$4.9 M
▶ Average Salary/Benefit	\$41,400	\$22,700
▶ Average Age	47	73
▶ Average Service	10.9 years	NA

## 10-YEAR HISTORY OF APPROPRIATIONS (IN THOUSANDS)



## EARNED INCOME OF DISABILITY RETIREES (2012)

▶ Number of Disability Retirees	29
▶ Number Who Reported Earnings	9
▶ Number of Excess Earners	1
▶ Total Amount of Refund Due	\$123

▶ 2013 Return	15.13%
▶ 2013 Market Value	\$62.4 M
▶ 2009-2013 (Annualized)	11.81%
▶ 1985-2013 (Annualized)	8.39%



## Newton

City Hall  
1000 Commonwealth Avenue  
Newton Centre, MA 02459-1449  
Phone 617-796-1095  
Fax 617-796-1098

### Board Members

Nunzio J. Piselli (Chairperson),  
Paul Bianchi, Francis P. Capello, Jr.,  
Kimberly A. Fletcher, Esq.,  
David C. Wilkinson

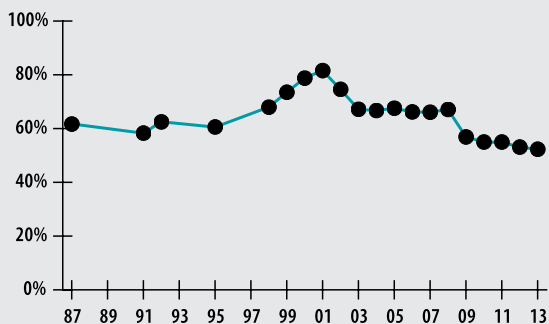
### Board Administrator

Kelly Byrne

### Board Meeting

Third Wednesday of the month at 3:00 pm

### FUNDED RATIO (1987-2013)

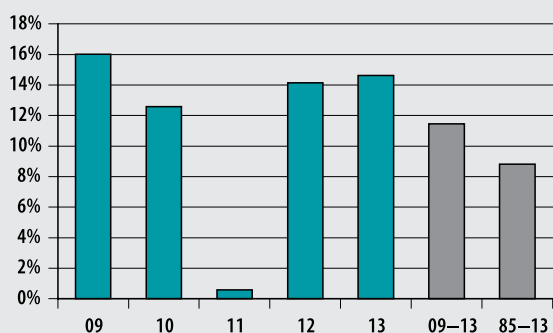


## ACTUARIAL

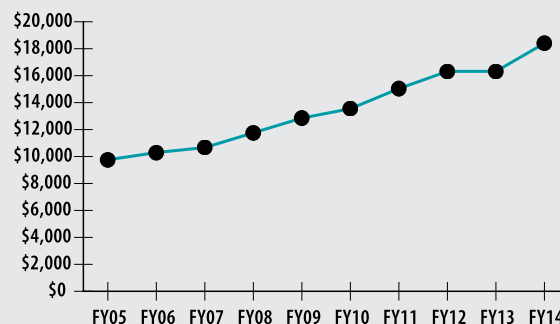
▶ Funded Ratio	52.3%
▶ Date of Last Valuation	01/13
▶ Actuary	Buck Consultants
▶ Assumed Rate of Return	7.75%
▶ Funding Schedule	3.75% Increasing
▶ Year Fully Funded	2037
▶ Unfunded Liability	\$244.3 M
▶ Total Pension Appropriation (Fiscal 2014)	\$18.4 M

	ACTIVE	RETIRED
▶ Number of Members	1,616	1,318
▶ Total Payroll/Benefit	\$83.0 M	\$33.9 M
▶ Average Salary/Benefit	\$51,300	\$25,700
▶ Average Age	NA	74
▶ Average Service	NA	NA

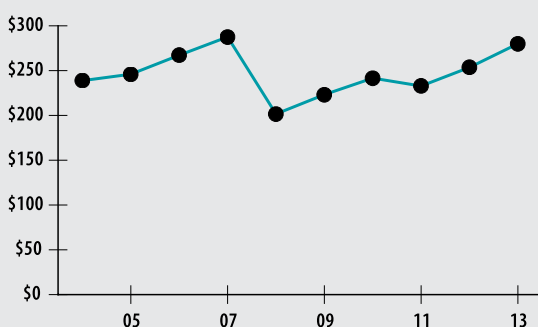
### INVESTMENT RETURN (2009-2013, 5 YEAR AND 29 YEAR AVERAGES)



## 10-YEAR HISTORY OF APPROPRIATIONS (IN THOUSANDS)



### ASSET GROWTH (2004-2013) (MARKET VALUE IN MILLIONS)



## EARNED INCOME OF DISABILITY RETIREES (2012)

▶ Number of Disability Retirees	147
▶ Number Who Reported Earnings	33
▶ Number of Excess Earners	3
▶ Total Amount of Refund Due	\$7,534

### INVESTMENT RETURN HISTORY

**29 years 2013**  
8.82%

**28 years 2012**  
8.62%

**27 years 2011**  
8.42%

**10 years 2013**  
6.43%

**10 years 2012**  
6.95%

**10 years 2011**  
4.51%

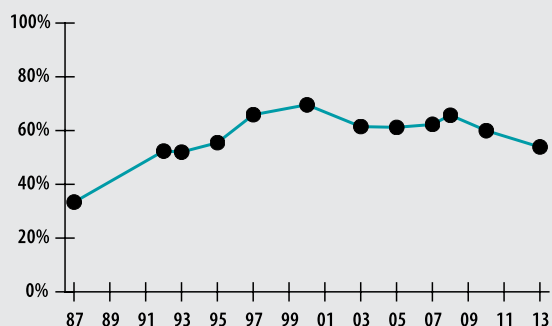
**5 years 2013**  
11.45%

**5 years 2012**  
1.63%

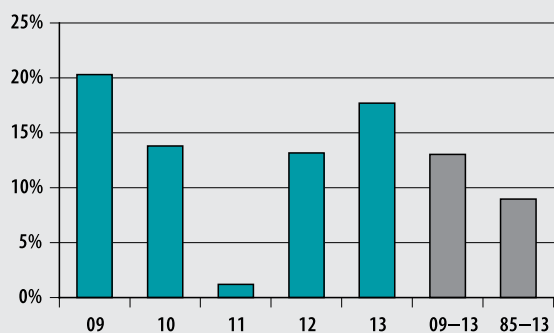
**5 years 2011**  
1.04%

▶ 2013 Return	14.62%
▶ 2013 Market Value	\$279.8 M
▶ 2009-2013 (Annualized)	11.45%
▶ 1985-2013 (Annualized)	8.82%

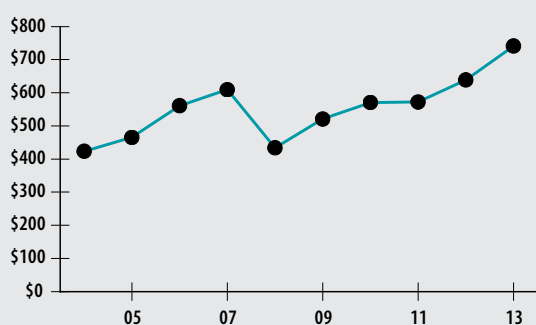
## FUNDED RATIO (1987-2013)



## INVESTMENT RETURN (2009-2013, 5 YEAR AND 29 YEAR AVERAGES)



## ASSET GROWTH (2004-2013) (MARKET VALUE IN MILLIONS)



## INVESTMENT RETURN HISTORY

**29 years 2013**  
8.97%

**28 years 2012**  
8.67%

**27 years 2011**  
8.50%

**10 years 2013**  
6.92%

**10 years 2012**  
7.57%

**10 years 2011**  
4.91%

**5 years 2013**  
13.05%

**5 years 2012**  
2.27%

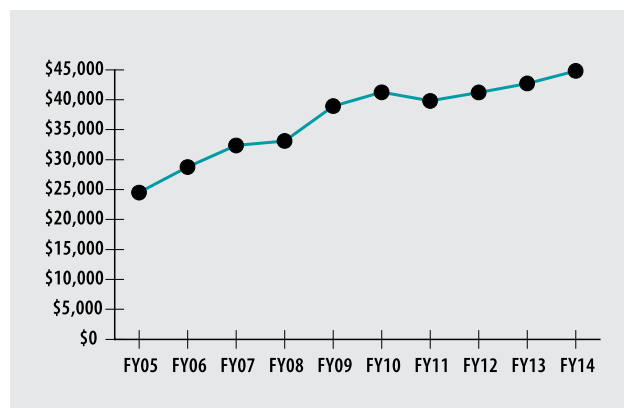
**5 years 2011**  
1.67%

## ACTUARIAL

▶ Funded Ratio	53.9%
▶ Date of Last Valuation	01/12
▶ Actuary	Sherman Actuarial Services, LLC
▶ Assumed Rate of Return	8.25%
▶ Funding Schedule	4.0% Increasing Phase-in
▶ Year Fully Funded	2031
▶ Unfunded Liability	\$520.7 M
▶ Total Pension Appropriation (Fiscal 2014)	\$44.8 M

	ACTIVE	RETIRED
▶ Number of Members	5,008	2,941
▶ Total Payroll/Benefit	\$229.1 M	\$62.5 M
▶ Average Salary/Benefit	\$45,700	\$21,200
▶ Average Age	NA	73
▶ Average Service	NA	NA

## 10-YEAR HISTORY OF APPROPRIATIONS (IN THOUSANDS)



## EARNED INCOME OF DISABILITY RETIREES (2012)

▶ Number of Disability Retirees	317
▶ Number Who Reported Earnings	89
▶ Number of Excess Earners	4
▶ Total Amount of Refund Due	\$34,400

▶ 2013 Return	17.71%
▶ 2013 Market Value	\$741.2 M
▶ 2009-2013 (Annualized)	13.05%
▶ 1985-2013 (Annualized)	8.97%

## North Adams

85 Main Street, Room 322  
North Adams, MA 01247  
Phone 413-663-5185  
Fax 413-664-9412

### Board Members

Lawrence R. O'Brien (Chairperson),  
Matthew Labonte, Alan Marden,  
Fred T. Thompson, Esq., Kathleen A. Wall

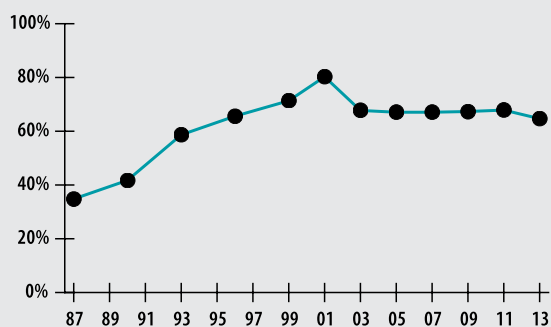
### Board Administrator

Beth Matson

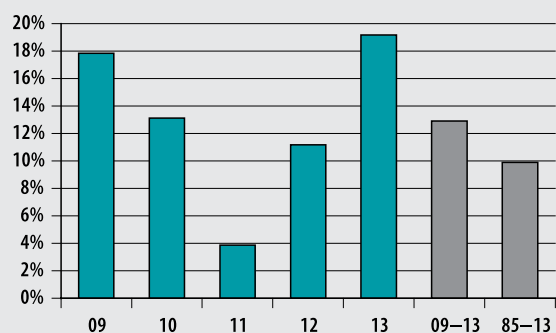
### Board Meeting

Varies

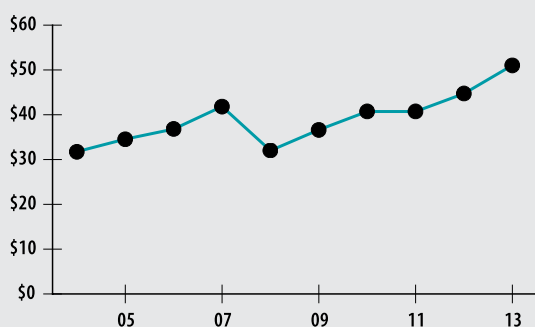
### FUNDED RATIO (1987-2013)



### INVESTMENT RETURN (2009-2013, 5 YEAR AND 29 YEAR AVERAGES)



### ASSET GROWTH (2004-2013) (MARKET VALUE IN MILLIONS)



### INVESTMENT RETURN HISTORY

**29 years 2013**  
9.90%

**28 years 2012**  
9.58%

**27 years 2011**  
9.53%

**10 years 2013**  
8.20%

**10 years 2012**  
7.95%

**10 years 2011**  
6.27%

**5 years 2013**  
12.91%

**5 years 2012**  
3.95%

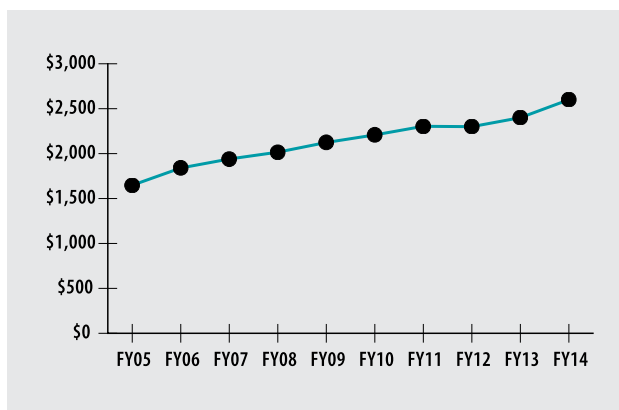
**5 years 2011**  
4.91%

## ACTUARIAL

▶ Funded Ratio	64.7%
▶ Date of Last Valuation	01/13
▶ Actuary	PERAC
▶ Assumed Rate of Return	7.75%
▶ Funding Schedule	4.0% Increasing Phase-in
▶ Year Fully Funded	2029
▶ Unfunded Liability	\$23.2 M
▶ Total Pension Appropriation (Fiscal 2014)	\$2.6 M

	ACTIVE	RETIRED
▶ Number of Members	339	222
▶ Total Payroll/Benefit	\$10.1 M	\$4.1 M
▶ Average Salary/Benefit	\$29,800	\$18,400
▶ Average Age	47	73
▶ Average Service	11.1	NA

## 10-YEAR HISTORY OF APPROPRIATIONS (IN THOUSANDS)

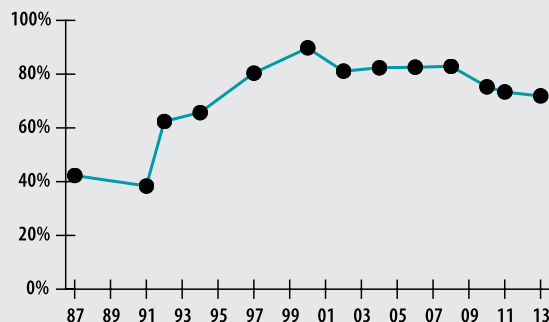


## EARNED INCOME OF DISABILITY RETIREES (2012)

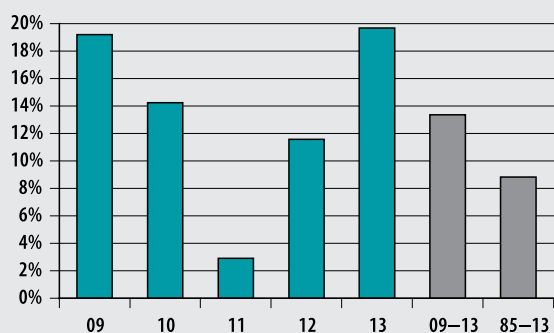
▶ Number of Disability Retirees	35
▶ Number Who Reported Earnings	12
▶ Number of Excess Earners	1
▶ Total Amount of Refund Due	\$5,729

▶ 2013 Return	19.19%
▶ 2013 Market Value	\$51.0 M
▶ 2009-2013 (Annualized)	12.91%
▶ 1985-2013 (Annualized)	9.90%

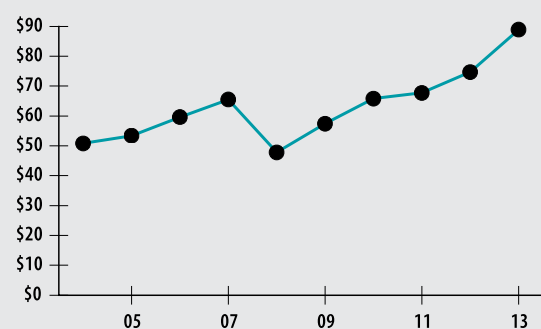
#### FUNDED RATIO (1987-2013)



#### INVESTMENT RETURN (2009-2013, 5 YEAR AND 29 YEAR AVERAGES)



#### ASSET GROWTH (2004-2013) (MARKET VALUE IN MILLIONS)



#### INVESTMENT RETURN HISTORY

**29 years 2013**  
8.84%

**28 years 2012**  
8.47%

**27 years 2011**  
8.36%

**10 years 2013**  
6.90%

**10 years 2012**  
6.88%

**10 years 2011**  
5.13%

**5 years 2013**  
13.36%

**5 years 2012**  
3.46%

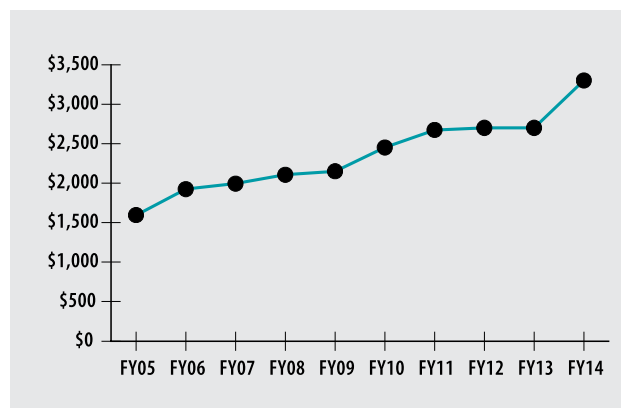
**5 years 2011**  
2.28%

#### ACTUARIAL

▶ Funded Ratio	71.9%
▶ Date of Last Valuation	01/13
▶ Actuary	Sherman Actuarial Services, LLC
▶ Assumed Rate of Return	8.00%
▶ Funding Schedule	4.0% Increasing
▶ Year Fully Funded	2033
▶ Unfunded Liability	\$28.5 M
▶ Total Pension Appropriation (Fiscal 2014)	\$3.3 M

	ACTIVE	RETIRED
▶ Number of Members	468	234
▶ Total Payroll/Benefit	\$20.0 M	\$4.9 M
▶ Average Salary/Benefit	\$42,800	\$21,100
▶ Average Age	NA	71
▶ Average Service	NA	NA

#### 10-YEAR HISTORY OF APPROPRIATIONS (IN THOUSANDS)



#### EARNED INCOME OF DISABILITY RETIREES (2012)

▶ Number of Disability Retirees	25
▶ Number Who Reported Earnings	8
▶ Number of Excess Earners	0
▶ Total Amount of Refund Due	\$0

▶ 2013 Return	19.68%
▶ 2013 Market Value	\$88.9 M
▶ 2009-2013 (Annualized)	13.36%
▶ 1985-2013 (Annualized)	8.84%

## Board Members

Joyce Karpinski (Chairperson),  
Shirley A. LaRose, Michael J. Lyons,  
Thomas F. Sullivan, Susan L. Wright

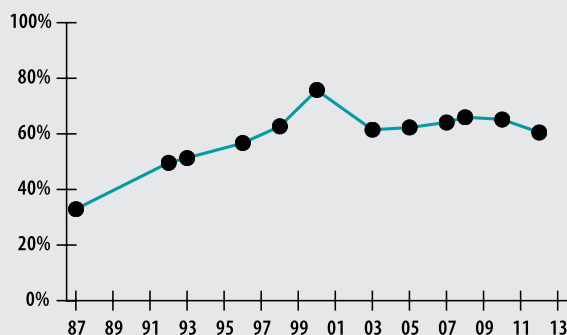
## Board Administrator

David Shipka

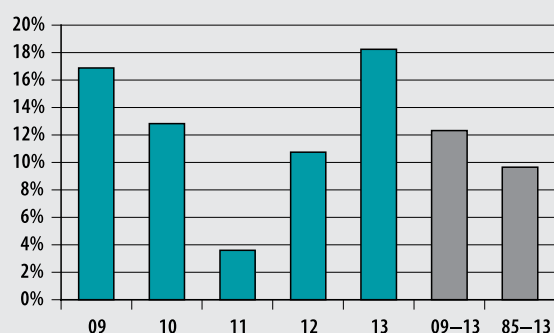
## Board Meeting

Last Tuesday or Thursday of each month

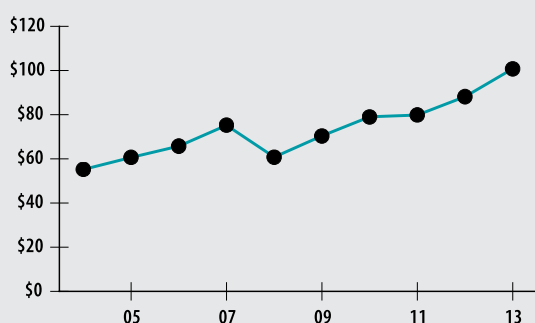
### FUNDED RATIO (1987-2013)



### INVESTMENT RETURN (2009-2013, 5 YEAR AND 29 YEAR AVERAGES)



### ASSET GROWTH (2004-2013) (MARKET VALUE IN MILLIONS)



### INVESTMENT RETURN HISTORY

#### 29 years 2013

9.66%

#### 28 years 2012

9.37%

#### 27 years 2011

9.32%

#### 10 years 2013

8.16%

#### 10 years 2012

7.81%

#### 10 years 2011

6.08%

#### 5 years 2013

12.34%

#### 5 years 2012

4.08%

#### 5 years 2011

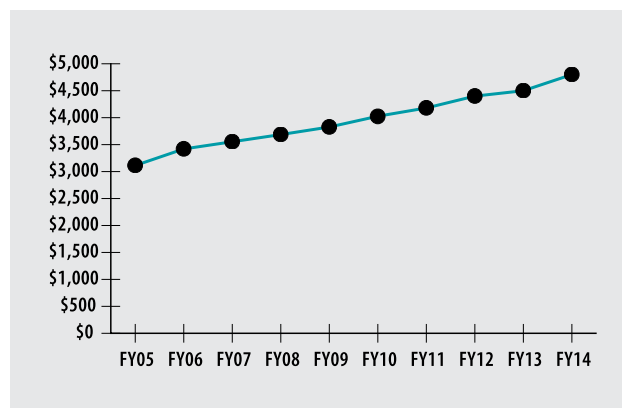
4.96%

## ACTUARIAL

▶ Funded Ratio	60.5%
▶ Date of Last Valuation	01/12
▶ Actuary	Stone Consulting
▶ Assumed Rate of Return	7.75%
▶ Funding Schedule	3.77% Increasing
▶ Year Fully Funded	2036
▶ Unfunded Liability	\$51.9 M
▶ Total Pension Appropriation (Fiscal 2014)	\$4.8 M

	ACTIVE	RETIRED
▶ Number of Members	624	363
▶ Total Payroll/Benefit	\$23.9 M	\$7.1 M
▶ Average Salary/Benefit	\$38,300	\$19,600
▶ Average Age	47	70
▶ Average Service	11.4 years	NA

## 10-YEAR HISTORY OF APPROPRIATIONS (IN THOUSANDS)

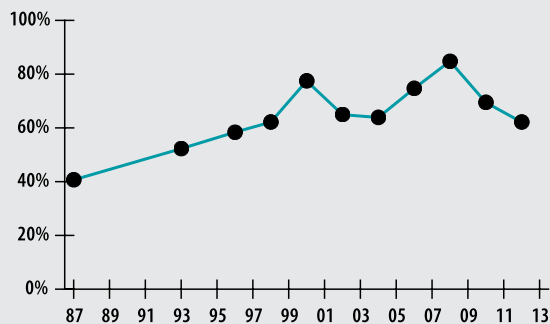


## EARNED INCOME OF DISABILITY RETIREES (2012)

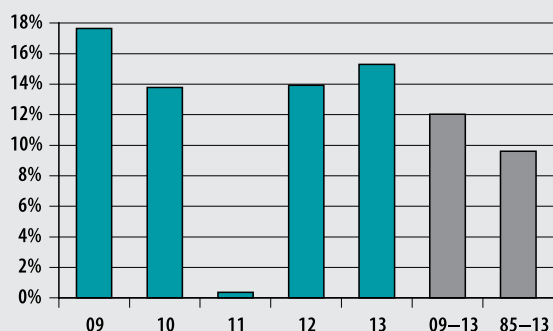
▶ Number of Disability Retirees	42
▶ Number Who Reported Earnings	15
▶ Number of Excess Earners	0
▶ Total Amount of Refund Due	\$0

▶ 2013 Return	18.24%
▶ 2013 Market Value	\$100.7 M
▶ 2009-2013 (Annualized)	12.34%
▶ 1985-2013 (Annualized)	9.66%

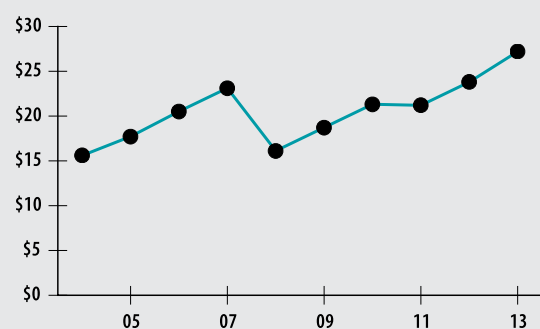
## FUNDED RATIO (1987-2013)



## INVESTMENT RETURN (2009-2013, 5 YEAR AND 29 YEAR AVERAGES)



## ASSET GROWTH (2004-2013) (MARKET VALUE IN MILLIONS)



## INVESTMENT RETURN HISTORY

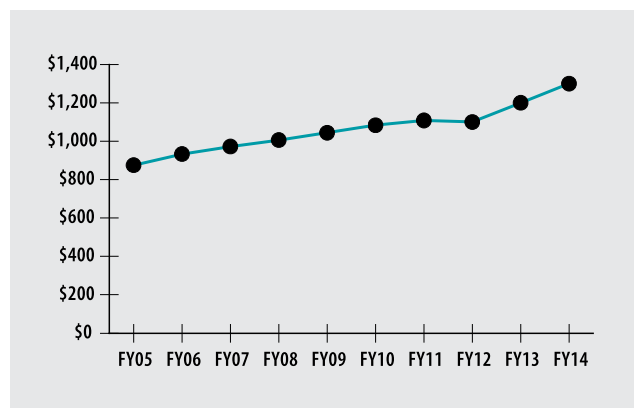
<b>29 years 2013</b> 9.62%	<b>28 years 2012</b> 9.43%	<b>27 years 2011</b> 9.26%
<b>10 years 2013</b> 7.71%	<b>10 years 2012</b> 8.71%	<b>10 years 2011</b> 6.32%
<b>5 years 2013</b> 12.03%	<b>5 years 2012</b> 1.53%	<b>5 years 2011</b> 1.20%

## ACTUARIAL

▶ Funded Ratio	62.2%
▶ Date of Last Valuation	01/12
▶ Actuary	Stone Consulting
▶ Assumed Rate of Return	8.00%
▶ Funding Schedule	3.91% Increasing
▶ Year Fully Funded	2035
▶ Unfunded Liability	\$13.2 M
▶ Total Pension Appropriation (Fiscal 2014)	\$1.3 M

	ACTIVE	RETIRED
▶ Number of Members	184	108
▶ Total Payroll/Benefit	\$7.3 M	\$1.9 M
▶ Average Salary/Benefit	\$39,700	\$17,100
▶ Average Age	47	74
▶ Average Service	10.3 years	NA

## 10-YEAR HISTORY OF APPROPRIATIONS (IN THOUSANDS)



## EARNED INCOME OF DISABILITY RETIREES (2012)

▶ Number of Disability Retirees	10
▶ Number Who Reported Earnings	3
▶ Number of Excess Earners	1
▶ Total Amount of Refund Due	\$788

▶ 2013 Return	15.29%
▶ 2013 Market Value	\$27.2 M
▶ 2009-2013 (Annualized)	12.03%
▶ 1985-2013 (Annualized)	9.62%

## Norwood

566 Washington Street  
Norwood, MA 02062  
Phone 781-762-1240, Ext. 157  
Fax 781-278-3024

### Board Members

Thomas O'Toole, (Chairperson),  
Eileen Hickey, Ted Mulvehill,  
Thomas A. Norrie, Robert M. Thornton

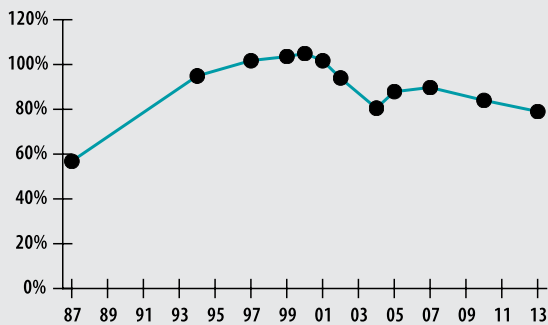
### Board Administrator

Debra A. Wilkes

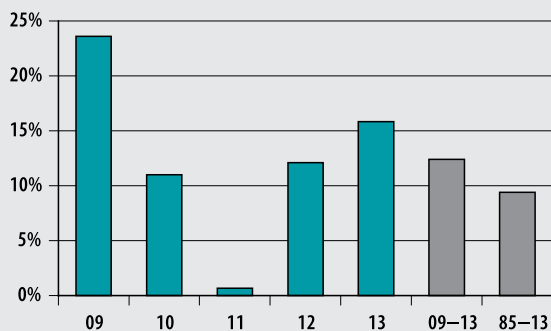
### Board Meeting

Third Thursday of each month

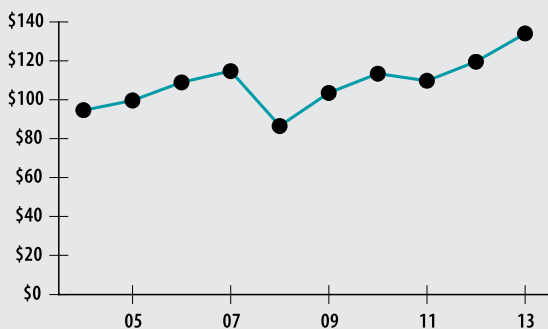
### FUNDED RATIO (1987-2013)



### INVESTMENT RETURN (2009-2013, 5 YEAR AND 29 YEAR AVERAGES)



### ASSET GROWTH (2004-2013) (MARKET VALUE IN MILLIONS)



### INVESTMENT RETURN HISTORY

**29 years 2013**  
9.40%

**28 years 2012**  
9.17%

**27 years 2011**  
9.07%

**10 years 2013**  
7.51%

**10 years 2012**  
8.33%

**10 years 2011**  
6.08%

**5 years 2013**  
12.40%

**5 years 2012**  
4.23%

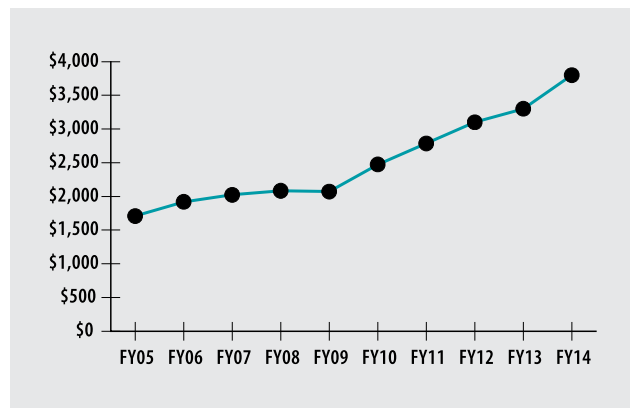
**5 years 2011**  
3.48%

## ACTUARIAL

▶ Funded Ratio	79.0%
▶ Date of Last Valuation	01/12
▶ Actuary	Sherman Actuarial Services, LLC
▶ Assumed Rate of Return	8.25%
▶ Funding Schedule	4.0% Increasing
▶ Year Fully Funded	2035
▶ Unfunded Liability	\$31.3 M
▶ Total Pension Appropriation (Fiscal 2014)	\$3.8 M

	ACTIVE	RETIRED
▶ Number of Members	585	363
▶ Total Payroll/Benefit	\$28.5 M	\$7.6 M
▶ Average Salary/Benefit	\$48,800	\$21,000
▶ Average Age	NA	74
▶ Average Service	NA	NA

## 10-YEAR HISTORY OF APPROPRIATIONS (IN THOUSANDS)

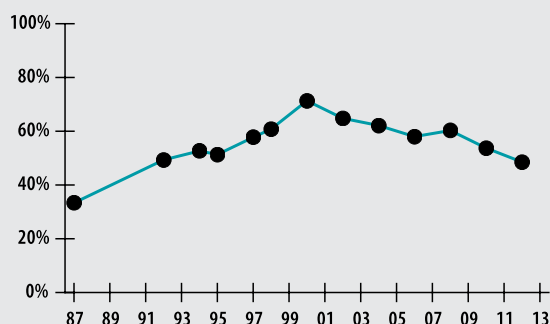


## EARNED INCOME OF DISABILITY RETIREES (2012)

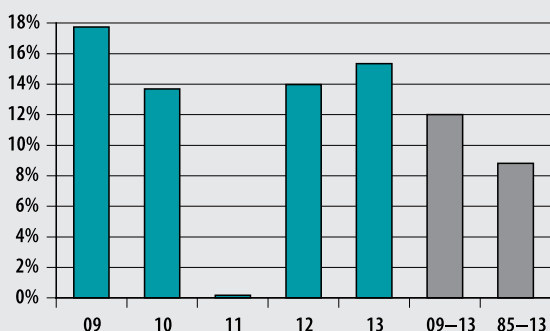
▶ Number of Disability Retirees	40
▶ Number Who Reported Earnings	12
▶ Number of Excess Earners	1
▶ Total Amount of Refund Due	\$1,040

▶ 2013 Return	15.84%
▶ 2013 Market Value	\$134.0 M
▶ 2009-2013 (Annualized)	12.40%
▶ 1985-2013 (Annualized)	9.40%

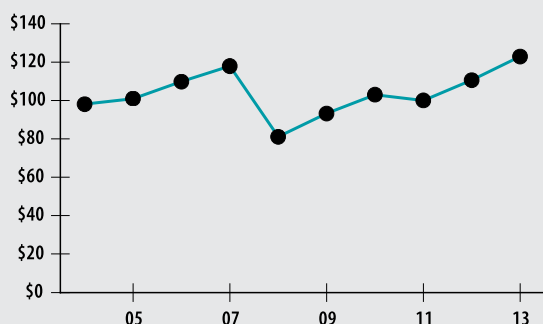
### FUNDED RATIO (1987-2013)



### INVESTMENT RETURN (2009-2013, 5 YEAR AND 29 YEAR AVERAGES)



### ASSET GROWTH (2004-2013) (MARKET VALUE IN MILLIONS)



### INVESTMENT RETURN HISTORY

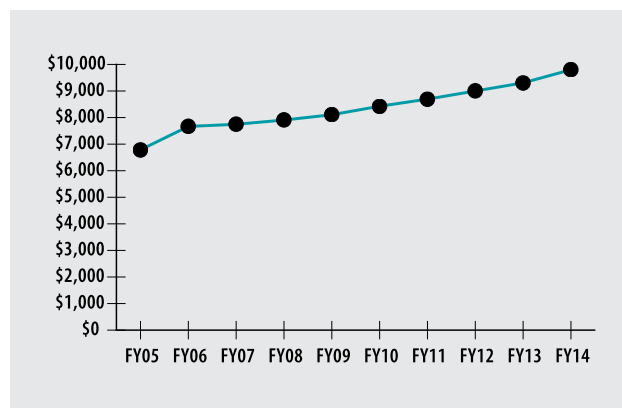
<b>29 years 2013</b> 8.83%	<b>28 years 2012</b> 8.61%	<b>27 years 2011</b> 8.41%
<b>10 years 2013</b> 5.94%	<b>10 years 2012</b> 6.35%	<b>10 years 2011</b> 3.87%
<b>5 years 2013</b> 12.01%	<b>5 years 2012</b> 1.53%	<b>5 years 2011</b> 0.93%

### ACTUARIAL

▶ Funded Ratio	48.5%
▶ Date of Last Valuation	01/12
▶ Actuary	Sherman Actuarial Services, LLC
▶ Assumed Rate of Return	8.25%
▶ Funding Schedule	4.0% Increasing Phase-in
▶ Year Fully Funded	2036
▶ Unfunded Liability	\$120.6 M
▶ Total Pension Appropriation (Fiscal 2014)	\$9.8 M

	ACTIVE	RETIRED
▶ Number of Members	792	766
▶ Total Payroll/Benefit	\$41.9 M	\$15.2 M
▶ Average Salary/Benefit	\$53,000	\$19,800
▶ Average Age	NA	76
▶ Average Service	NA	NA

### 10-YEAR HISTORY OF APPROPRIATIONS (IN THOUSANDS)



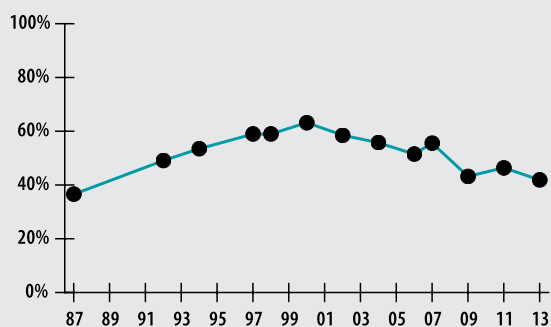
### EARNED INCOME OF DISABILITY RETIREES (2012)

▶ Number of Disability Retirees	64
▶ Number Who Reported Earnings	16
▶ Number of Excess Earners	0
▶ Total Amount of Refund Due	\$0

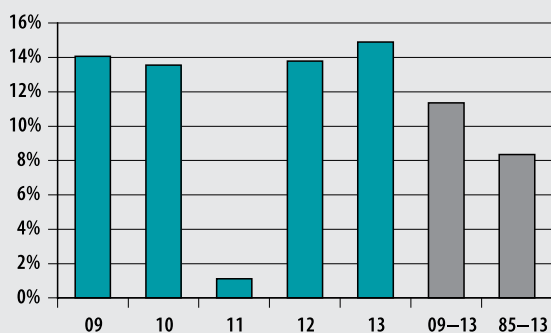
▶ 2013 Return	15.34%
▶ 2013 Market Value	\$122.9 M
▶ 2009-2013 (Annualized)	12.01%
▶ 1985-2013 (Annualized)	8.83%



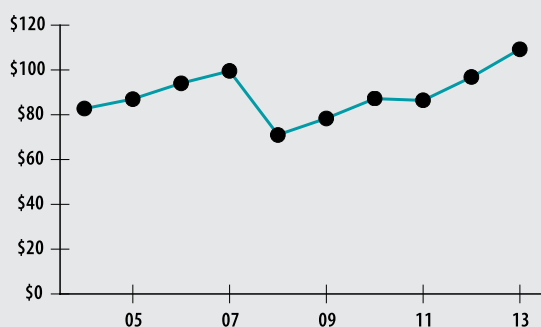
#### FUNDED RATIO (1987-2013)



#### INVESTMENT RETURN (2009-2013, 5 YEAR AND 29 YEAR AVERAGES)



#### ASSET GROWTH (2004-2013) (MARKET VALUE IN MILLIONS)



#### INVESTMENT RETURN HISTORY

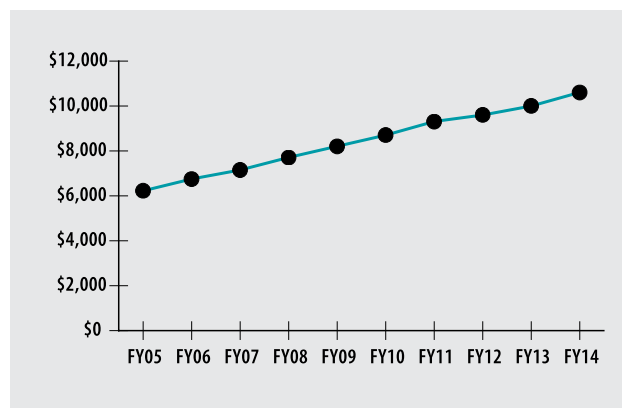
<b>29 years 2013</b> 8.36%	<b>28 years 2012</b> 8.13%	<b>27 years 2011</b> 7.93%
<b>10 years 2013</b> 5.76%	<b>10 years 2012</b> 6.28%	<b>10 years 2011</b> 3.64%
<b>5 years 2013</b> 11.36%	<b>5 years 2012</b> 1.57%	<b>5 years 2011</b> 0.50%

#### ACTUARIAL

▶ Funded Ratio	41.9%
▶ Date of Last Valuation	01/13
▶ Actuary	PERAC
▶ Assumed Rate of Return	7.75%
▶ Funding Schedule	4.0% Increasing
▶ Year Fully Funded	2040
▶ Unfunded Liability	\$130.7 M
▶ Total Pension Appropriation (Fiscal 2014)	\$10.6 M

	ACTIVE	RETIRED
▶ Number of Members	918	757
▶ Total Payroll/Benefit	\$32.3 M	\$13.9 M
▶ Average Salary/Benefit	\$35,100	\$18,300
▶ Average Age	50	75
▶ Average Service	12.3 years	NA

#### 10-YEAR HISTORY OF APPROPRIATIONS (IN THOUSANDS)



#### EARNED INCOME OF DISABILITY RETIREES (2012)

▶ Number of Disability Retirees	108
▶ Number Who Reported Earnings	24
▶ Number of Excess Earners	1
▶ Total Amount of Refund Due	\$959

▶ 2013 Return	14.91%
▶ 2013 Market Value	\$109.2 M
▶ 2009-2013 (Annualized)	11.36%
▶ 1985-2013 (Annualized)	8.36%

**Board Members**

Thomas M. Kelley (Chairperson),  
Lynne Barrett, Gerald Coughlin,  
Shawn H. Duhamel, Richard A. Manfredi

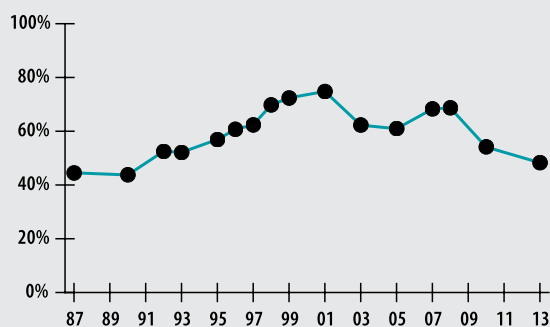
**Board Administrator**

Debra J. Sullivan

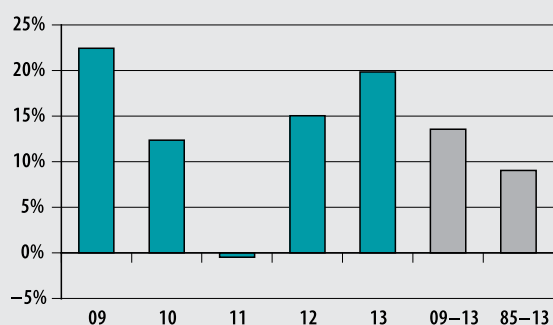
**Board Meeting**

Varies

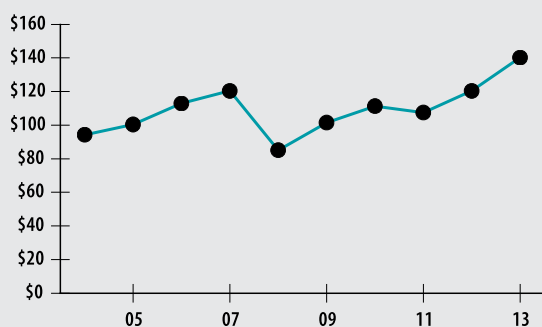
**FUNDED RATIO (1987-2013)**



**INVESTMENT RETURN (2009-2013, 5 YEAR AND 29 YEAR AVERAGES)**



**ASSET GROWTH (2004-2013) (MARKET VALUE IN MILLIONS)**



**INVESTMENT RETURN HISTORY**

**29 years 2013**  
9.07%

**28 years 2012**  
8.71%

**27 years 2011**  
8.48%

**10 years 2013**  
7.33%

**10 years 2012**  
7.58%

**10 years 2011**  
4.99%

**5 years 2013**  
13.56%

**5 years 2012**  
2.59%

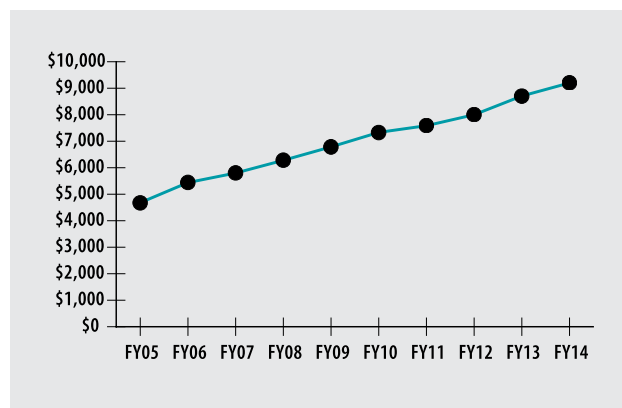
**5 years 2011**  
1.35%

**ACTUARIAL**

▶ Funded Ratio	48.3%
▶ Date of Last Valuation	01/13
▶ Actuary	PERAC
▶ Assumed Rate of Return	7.75%
▶ Funding Schedule	8.0% Total Increasing
▶ Year Fully Funded	2032
▶ Unfunded Liability	\$127.7 M
▶ Total Pension Appropriation (Fiscal 2014)	\$9.2 M

	ACTIVE	RETIRED
▶ Number of Members	877	626
▶ Total Payroll/Benefit	\$35.7 M	\$14.1 M
▶ Average Salary/Benefit	\$40,800	\$22,500
▶ Average Age	49	70
▶ Average Service	12.7 years	NA

**10-YEAR HISTORY OF APPROPRIATIONS (IN THOUSANDS)**



**EARNED INCOME OF DISABILITY RETIREES (2012)**

▶ Number of Disability Retirees	81
▶ Number Who Reported Earnings	25
▶ Number of Excess Earners	0
▶ Total Amount of Refund Due	\$0

▶ 2013 Return	19.86%
▶ 2013 Market Value	\$140.2 M
▶ 2009-2013 (Annualized)	13.56%
▶ 1985-2013 (Annualized)	9.07%

**Board Members**

Thomas J. O'Brien (Chairperson),  
John G. Duggan, James E. Harrington,  
Joseph F. McDonough, Esq.,  
John F. Sciara

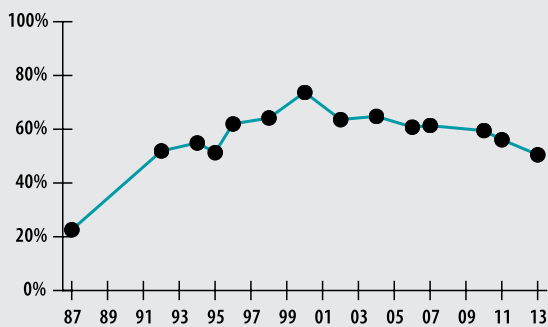
**Board Administrator**

William Farmer

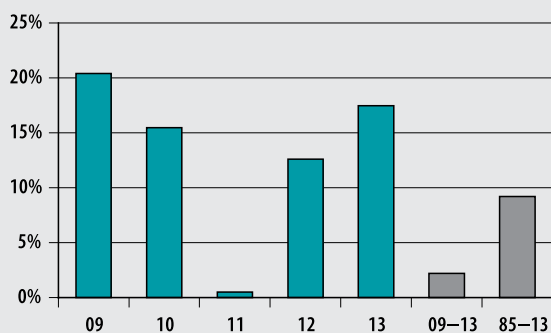
**Board Meeting**

Usually the last Tuesday of each month

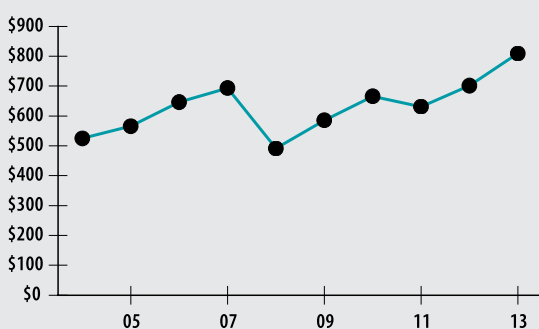
**FUNDED RATIO (1987-2013)**



**INVESTMENT RETURN (2009-2013, 5 YEAR AND 29 YEAR AVERAGES)**



**ASSET GROWTH (2004-2013) (MARKET VALUE IN MILLIONS)**



**INVESTMENT RETURN HISTORY**

**29 years 2013**

9.50%

**28 years 2012**

9.23%

**27 years 2011**

9.10%

**10 years 2013**

7.14%

**10 years 2012**

8.11%

**10 years 2011**

5.48%

**5 years 2013**

13.09%

**5 years 2012**

2.23%

**5 years 2011**

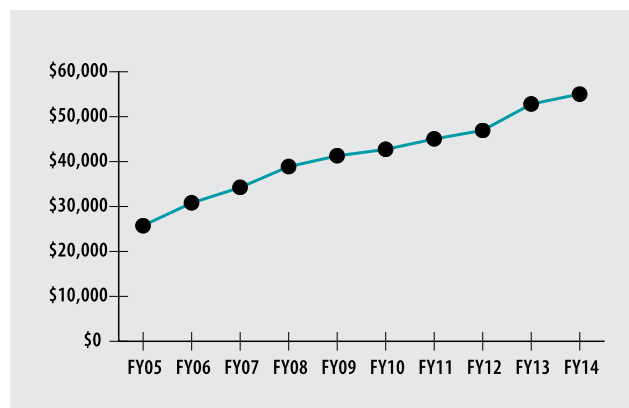
1.30%

**ACTUARIAL**

▶ Funded Ratio	50.5%
▶ Date of Last Valuation	01/13
▶ Actuary	Sherman Actuarial Services, LLC
▶ Assumed Rate of Return	8.25%
▶ Funding Schedule	4.0% Increasing Phase-in
▶ Year Fully Funded	2034
▶ Unfunded Liability	\$652.9 M
▶ Total Pension Appropriation (Fiscal 2014)	\$55.0 M

	ACTIVE	RETIRED
▶ Number of Members	5,729	3,588
▶ Total Payroll/Benefit	\$238.7 M	\$74.2 M
▶ Average Salary/Benefit	\$41,700	\$20,700
▶ Average Age	NA	72
▶ Average Service	NA	NA

**10-YEAR HISTORY OF APPROPRIATIONS (IN THOUSANDS)**



**EARNED INCOME OF DISABILITY RETIREES (2012)**

▶ Number of Disability Retirees	349
▶ Number Who Reported Earnings	94
▶ Number of Excess Earners	6
▶ Total Amount of Refund Due	\$75,718

▶ 2013 Return	17.47%
▶ 2013 Market Value	\$809.1 M
▶ 2009-2013 (Annualized)	13.09%
▶ 1985-2013 (Annualized)	9.50%

**Board Members**

George F. McCray (Chairperson),  
Richard P. Crespi, Richard D. Fitzpatrick,  
Robert E. Foy III, Susan M. O'Connor

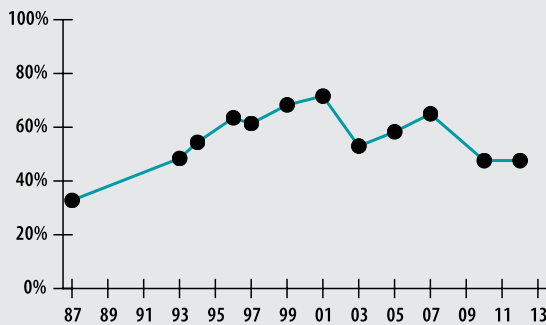
**Board Administrator**

Edward J. Masterson

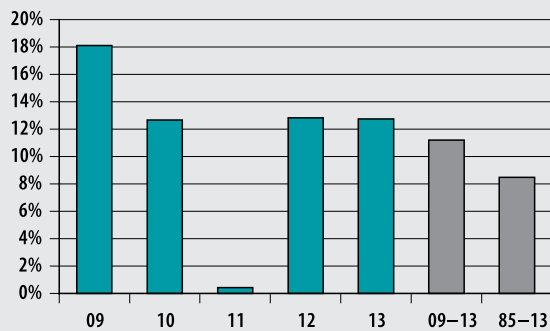
**Board Meeting**

Varies

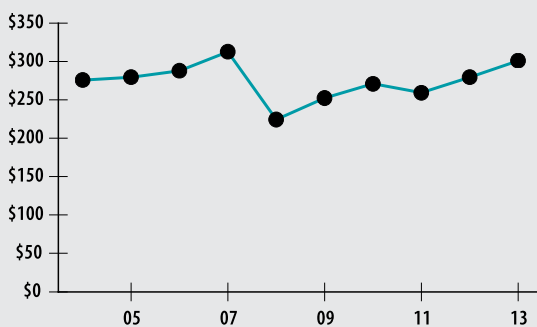
**FUNDED RATIO (1987-2013)**



**INVESTMENT RETURN (2009-2013, 5 YEAR AND 29 YEAR AVERAGES)**



**ASSET GROWTH (2004-2013) (MARKET VALUE IN MILLIONS)**



**INVESTMENT RETURN HISTORY**

**29 years 2013**  
8.50%

**28 years 2012**  
8.35%

**27 years 2011**  
8.19%

**10 years 2013**  
6.36%

**10 years 2012**  
7.05%

**10 years 2011**  
5.12%

**5 years 2013**  
11.21%

**5 years 2012**  
2.58%

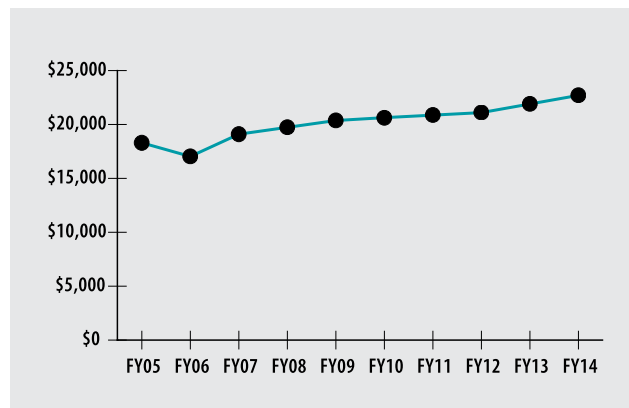
**5 years 2011**  
1.45%

**ACTUARIAL**

▶ Funded Ratio	47.6%
▶ Date of Last Valuation	01/12
▶ Actuary	Stone Consulting
▶ Assumed Rate of Return	8.00%
▶ Funding Schedule	3.91% Increasing
▶ Year Fully Funded	2040
▶ Unfunded Liability	\$302.4 M
▶ Total Pension Appropriation (Fiscal 2014)	\$22.7 M

	ACTIVE	RETIRED
▶ Number of Members	1,324	1,561
▶ Total Payroll/Benefit	\$75.6 M	\$39.5 M
▶ Average Salary/Benefit	\$57,100	\$25,300
▶ Average Age	49	73
▶ Average Service	13.6 years	NA

**10-YEAR HISTORY OF APPROPRIATIONS (IN THOUSANDS)**



**EARNED INCOME OF DISABILITY RETIREES (2012)**

▶ Number of Disability Retirees	158
▶ Number Who Reported Earnings	27
▶ Number of Excess Earners	0
▶ Total Amount of Refund Due	\$0

▶ 2013 Return	12.76%
▶ 2013 Market Value	\$301.0 M
▶ 2009-2013 (Annualized)	11.21%
▶ 1985-2013 (Annualized)	8.50%

## Reading

16 Lowell Street  
Reading, MA 01867  
Phone 781-942-9007  
Fax 781-942-9037

## Board Members

Francis P. Driscoll (Chairperson),  
Sharon M. Angstrom, Thomas A. Clough,  
Richard P. Foley, Joseph R. Veno

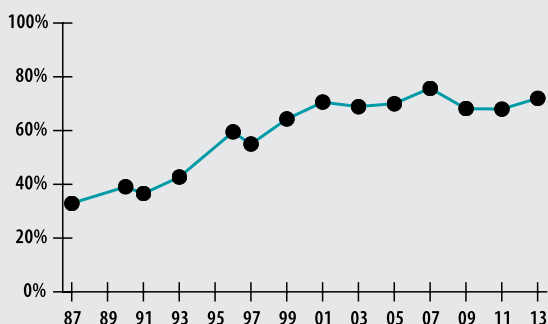
## Board Administrator

Colleen Loughlin

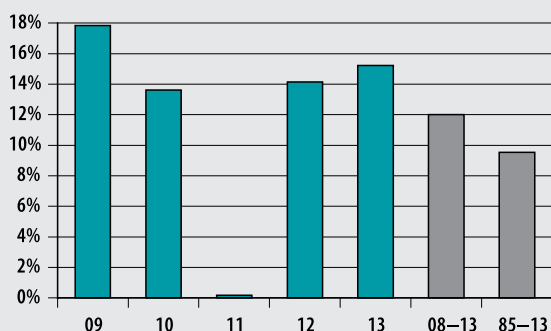
## Board Meeting

Fourth Tuesday of each month at 6:00 pm

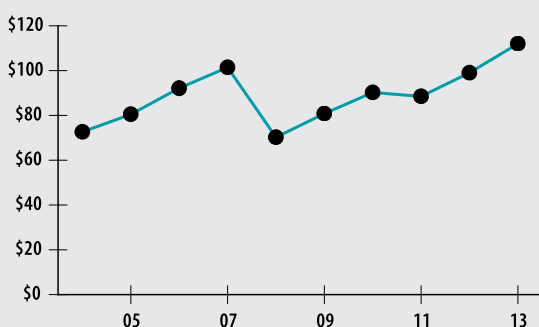
### FUNDED RATIO (1987-2013)



### INVESTMENT RETURN (2009-2013, 5 YEAR AND 29 YEAR AVERAGES)



### ASSET GROWTH (2004-2013) (MARKET VALUE IN MILLIONS)



### INVESTMENT RETURN HISTORY

**29 years 2013**  
9.54%

**28 years 2012**  
9.34%

**27 years 2011**  
9.17%

**10 years 2013**  
7.73%

**10 years 2012**  
8.73%

**10 years 2011**  
6.29%

**5 years 2013**  
12.02%

**5 years 2012**  
1.57%

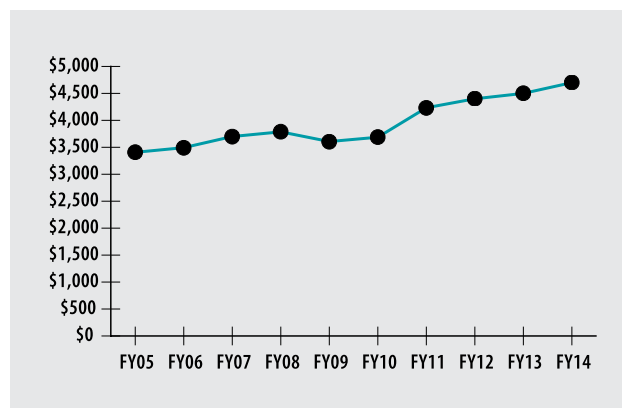
**5 years 2011**  
1.21%

## ACTUARIAL

▶ Funded Ratio	72.0%
▶ Date of Last Valuation	07/13
▶ Actuary	KMS Actuaries
▶ Assumed Rate of Return	7.75%
▶ Funding Schedule	4.5% Total Increasing
▶ Year Fully Funded	2028
▶ Unfunded Liability	\$39.5 M
▶ Total Pension Appropriation (Fiscal 2014)	\$4.7 M

	ACTIVE	RETIRED
▶ Number of Members	344	331
▶ Total Payroll/Benefit	\$20.9 M	\$8.2 M
▶ Average Salary/Benefit	\$60,800	\$24,900
▶ Average Age	48	74
▶ Average Service	15.2 years	NA

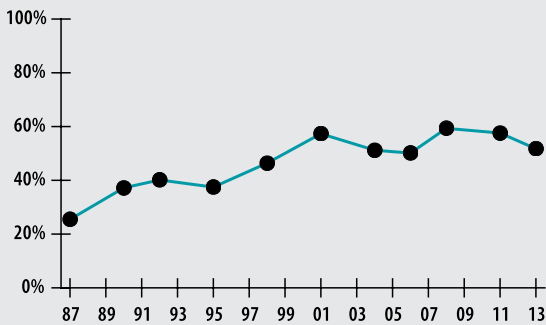
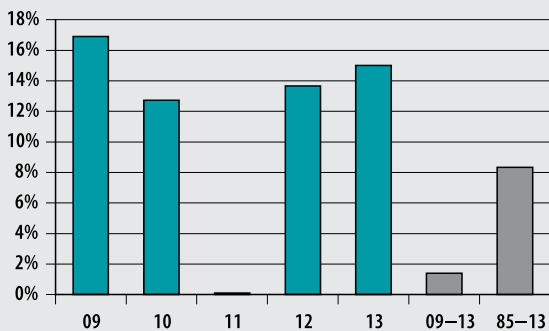
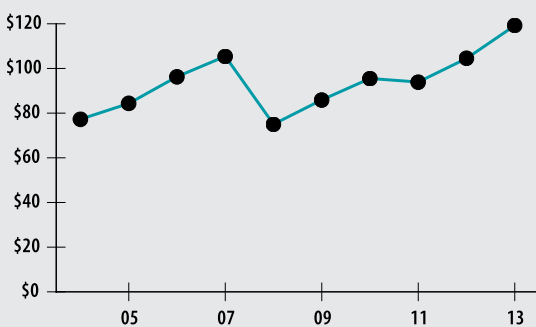
## 10-YEAR HISTORY OF APPROPRIATIONS (IN THOUSANDS)



## EARNED INCOME OF DISABILITY RETIREES (2012)

▶ Number of Disability Retirees	40
▶ Number Who Reported Earnings	10
▶ Number of Excess Earners	2
▶ Total Amount of Refund Due	\$28,361

▶ 2013 Return	15.22%
▶ 2013 Market Value	\$112.0 M
▶ 2009-2013 (Annualized)	12.02%
▶ 1985-2013 (Annualized)	9.54%

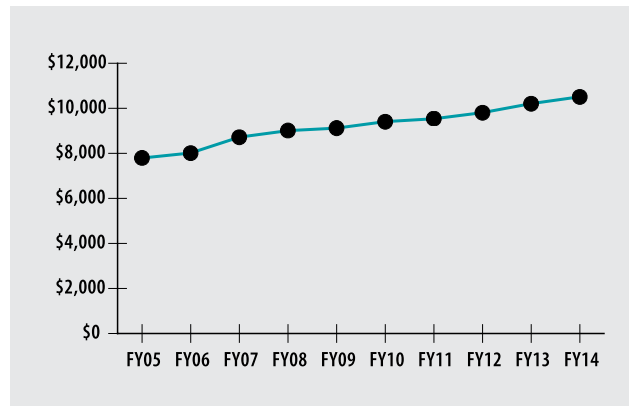
**FUNDED RATIO (1987-2013)**

**INVESTMENT RETURN (2009-2013, 5 YEAR AND 29 YEAR AVERAGES)**

**ASSET GROWTH (2004-2013) (MARKET VALUE IN MILLIONS)**

**INVESTMENT RETURN HISTORY**

<b>29 years 2013</b> 8.56%	<b>28 years 2012</b> 8.34%	<b>27 years 2011</b> 8.14%
<b>10 years 2013</b> 7.39%	<b>10 years 2012</b> 8.31%	<b>10 years 2011</b> 6.00%
<b>5 years 2013</b> 11.51%	<b>5 years 2012</b> 1.41%	<b>5 years 2011</b> 1.00%

**ACTUARIAL**

▶ Funded Ratio	51.8%
▶ Date of Last Valuation	01/13
▶ Actuary	PERAC
▶ Assumed Rate of Return	7.75%
▶ Funding Schedule	3.8% Increasing
▶ Year Fully Funded	2031
▶ Unfunded Liability	\$95.0 M
▶ Total Pension Appropriation (Fiscal 2014)	\$10.5 M

	<b>ACTIVE</b>	<b>RETIRED</b>
▶ Number of Members	538	528
▶ Total Payroll/Benefit	\$27.4 M	\$13.1 M
▶ Average Salary/Benefit	\$51,000	\$24,900
▶ Average Age	50	76
▶ Average Service	13.0 years	NA

**10-YEAR HISTORY OF APPROPRIATIONS (IN THOUSANDS)**

**EARNED INCOME OF DISABILITY RETIREES (2012)**

▶ Number of Disability Retirees	119
▶ Number Who Reported Earnings	31
▶ Number of Excess Earners	2
▶ Total Amount of Refund Due	\$24,096

▶ 2013 Return	15.00%
▶ 2013 Market Value	\$119.2 M
▶ 2009-2013 (Annualized)	11.51%
▶ 1985-2013 (Annualized)	8.56%

## Salem

20 Central Street  
Suite 110  
Salem, MA 01970  
Phone 978-745-8983  
Fax 978-745-4216

### Board Members

Sally Hayes (Chairperson),  
John H. Burke, Jr., Kimberly Driscoll,  
Robert Lutts, Sarah A. Stanton

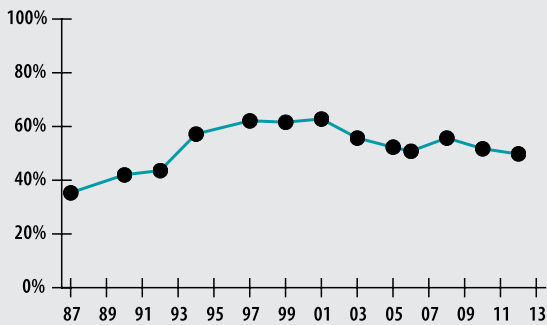
### Board Administrator

Paul Findlen

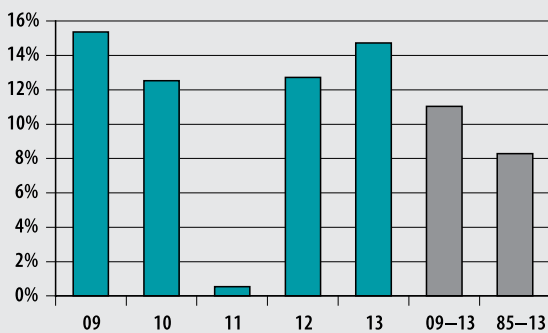
### Board Meeting

Last Thursday of each month

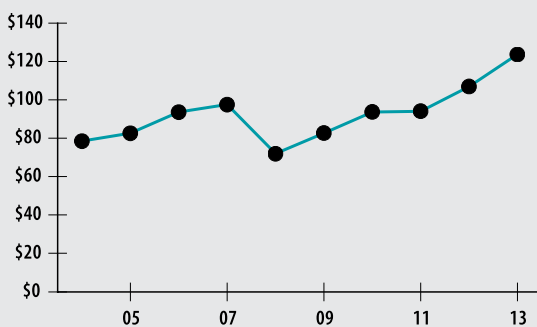
### FUNDED RATIO (1987-2013)



### INVESTMENT RETURN (2009-2013, 5 YEAR AND 29 YEAR AVERAGES)



### ASSET GROWTH (2004-2013) (MARKET VALUE IN MILLIONS)



### INVESTMENT RETURN HISTORY

**29 years 2013**  
8.29%

**28 years 2012**  
8.06%

**27 years 2011**  
7.90%

**10 years 2013**  
5.66%

**10 years 2012**  
6.03%

**10 years 2011**  
3.84%

**5 years 2013**  
11.04%

**5 years 2012**  
0.90%

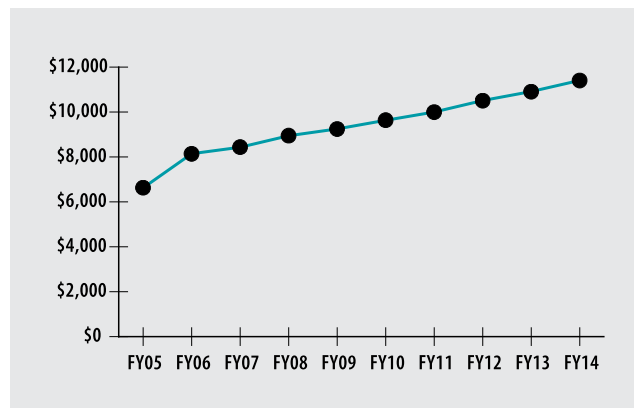
**5 years 2011**  
0.00%

## ACTUARIAL

▶ Funded Ratio	49.8%
▶ Date of Last Valuation	01/12
▶ Actuary	The Segal Company
▶ Assumed Rate of Return	8.00%
▶ Funding Schedule	4.5% Total Increasing
▶ Year Fully Funded	2032
▶ Unfunded Liability	\$107.5 M
▶ Total Pension Appropriation (Fiscal 2014)	\$11.4 M

	ACTIVE	RETIRED
▶ Number of Members	804	581
▶ Total Payroll/Benefit	\$37.1 M	\$12.4 M
▶ Average Salary/Benefit	\$46,100	\$21,400
▶ Average Age	49	NA
▶ Average Service	12.3 years	NA

## 10-YEAR HISTORY OF APPROPRIATIONS (IN THOUSANDS)

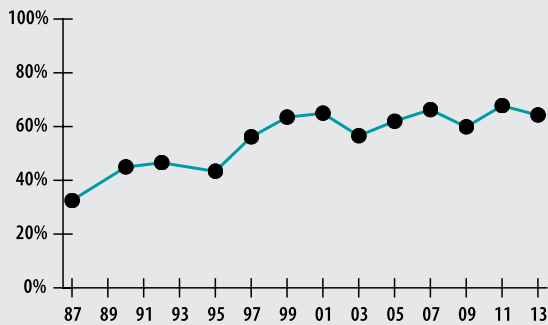


## EARNED INCOME OF DISABILITY RETIREES (2012)

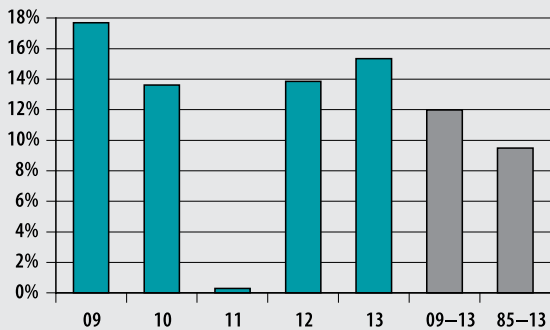
▶ Number of Disability Retirees	63
▶ Number Who Reported Earnings	11
▶ Number of Excess Earners	1
▶ Total Amount of Refund Due	\$27,240

▶ 2013 Return	14.72%
▶ 2013 Market Value	\$123.6 M
▶ 2009-2013 (Annualized)	11.04%
▶ 1985-2013 (Annualized)	8.29%

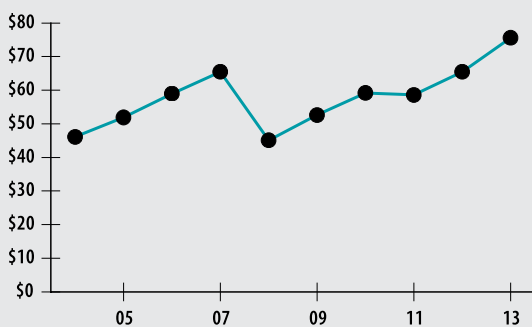
### FUNDED RATIO (1987-2013)



### INVESTMENT RETURN (2009-2013, 5 YEAR AND 29 YEAR AVERAGES)



### ASSET GROWTH (2004-2013) (MARKET VALUE IN MILLIONS)



### INVESTMENT RETURN HISTORY

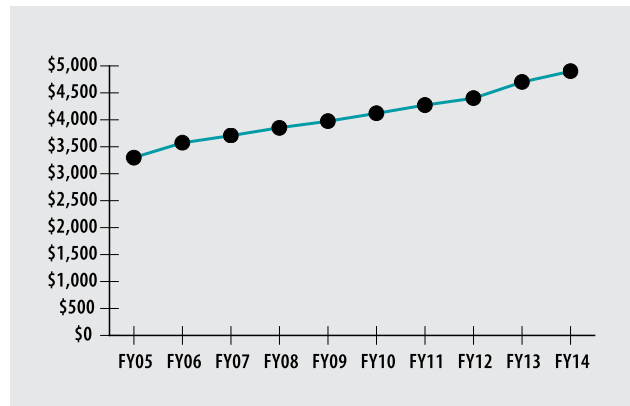
<b>29 years 2013</b> 9.48%	<b>28 years 2012</b> 9.28%	<b>27 years 2011</b> 9.11%
<b>10 years 2013</b> 7.68%	<b>10 years 2012</b> 8.65%	<b>10 years 2011</b> 6.26%
<b>5 years 2013</b> 11.99%	<b>5 years 2012</b> 1.54%	<b>5 years 2011</b> 1.20%

## ACTUARIAL

▶ Funded Ratio	64.3%
▶ Date of Last Valuation	01/13
▶ Actuary	PERAC
▶ Assumed Rate of Return	7.75%
▶ Funding Schedule	2.0% Increasing Phase-in
▶ Year Fully Funded	2025
▶ Unfunded Liability	\$37.5 M
▶ Total Pension Appropriation (Fiscal 2014)	\$4.9 M

	ACTIVE	RETIRED
▶ Number of Members	336	279
▶ Total Payroll/Benefit	\$14.5 M	\$6.5 M
▶ Average Salary/Benefit	\$43,300	\$23,400
▶ Average Age	48	75
▶ Average Service	13.3 years	NA

## 10-YEAR HISTORY OF APPROPRIATIONS (IN THOUSANDS)



## EARNED INCOME OF DISABILITY RETIREES (2012)

▶ Number of Disability Retirees	37
▶ Number Who Reported Earnings	10
▶ Number of Excess Earners	0
▶ Total Amount of Refund Due	\$0

▶ 2013 Return	15.34%
▶ 2013 Market Value	\$75.6 M
▶ 2009-2013 (Annualized)	11.99%
▶ 1985-2013 (Annualized)	9.48%



**Board Members**

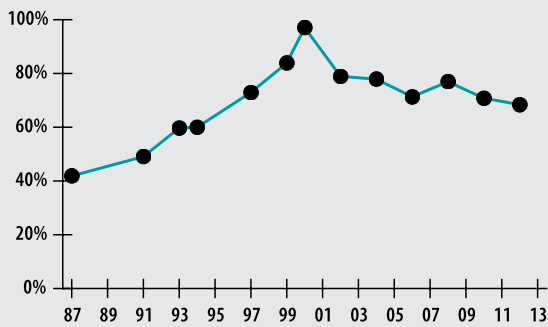
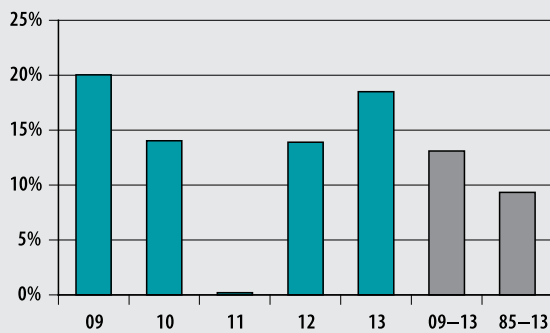
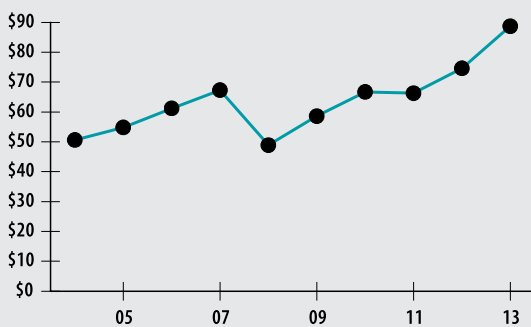
Caryn M. Shea (Chairperson),  
Ralph Iaccarino, Thomas M. Kennedy,  
Mary E. Thompson, Robert Tozeski

**Board Administrator**

Gail A. Sokolowski

**Board Meeting**

Varies

**FUNDED RATIO (1987-2013)**

**INVESTMENT RETURN (2009-2013, 5 YEAR AND 29 YEAR AVERAGES)**

**ASSET GROWTH (2004-2013) (MARKET VALUE IN MILLIONS)**

**INVESTMENT RETURN HISTORY**
**29 years 2013**

9.34%

**28 years 2012**

9.03%

**27 years 2011**

8.85%

**10 years 2013**

7.21%

**10 years 2012**

7.34%

**10 years 2011**

5.30%

**5 years 2013**

13.12%

**5 years 2012**

2.51%

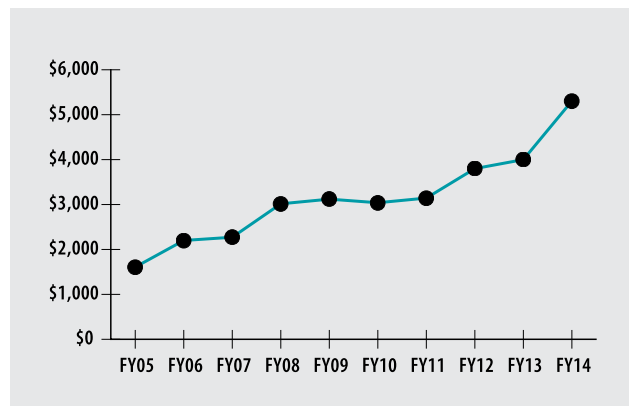
**5 years 2011**

1.77%

**ACTUARIAL**

▶ Funded Ratio	68.4%
▶ Date of Last Valuation	01/12
▶ Actuary	Sherman Actuarial Services, LLC
▶ Assumed Rate of Return	8.00%
▶ Funding Schedule	4.5% Increasing
▶ Year Fully Funded	2022
▶ Unfunded Liability	\$33.2 M
▶ Total Pension Appropriation (Fiscal 2014)	\$5.3 M

	ACTIVE	RETIRED
▶ Number of Members	582	237
▶ Total Payroll/Benefit	\$22.7 M	\$5.7 M
▶ Average Salary/Benefit	\$39,000	\$24,000
▶ Average Age	NA	73
▶ Average Service	NA	NA

**10-YEAR HISTORY OF APPROPRIATIONS (IN THOUSANDS)**

**EARNED INCOME OF DISABILITY RETIREES (2012)**

▶ Number of Disability Retirees	29
▶ Number Who Reported Earnings	10
▶ Number of Excess Earners	0
▶ Total Amount of Refund Due	\$0

▶ 2013 Return	18.50%
▶ 2013 Market Value	\$88.7 M
▶ 2009-2013 (Annualized)	13.12%
▶ 1985-2013 (Annualized)	9.34%

## Somerville

City Hall Annex  
50 Evergreen Avenue  
Somerville, MA 02145  
Phone 617-625-6600  
Fax 617-666-4325

### Board Members

John E. Rourke (Chairperson),  
Edward F. Bean, Jr., Austin Faison,  
John M. Memory, Thomas Ross

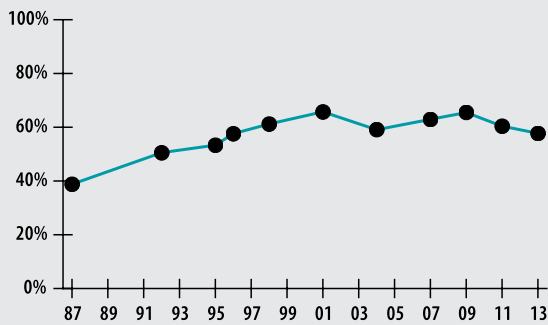
### Board Administrator

Michael Pasquariello

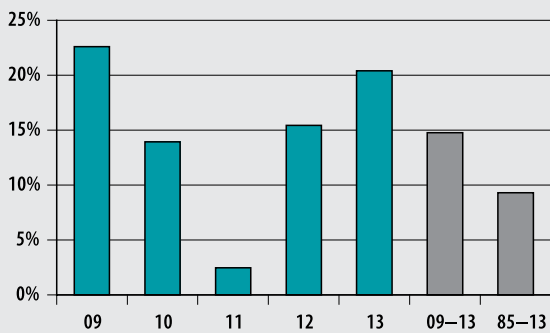
### Board Meeting

Varies

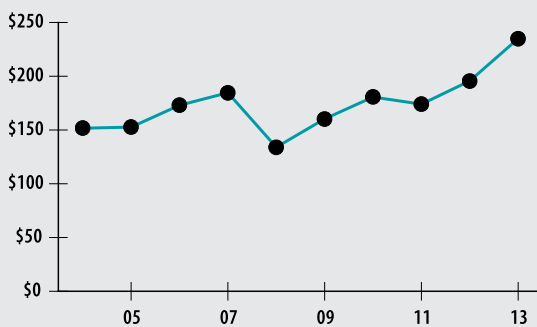
### FUNDED RATIO (1987-2013)



### INVESTMENT RETURN (2009-2013, 5 YEAR AND 29 YEAR AVERAGES)



### ASSET GROWTH (2004-2013) (MARKET VALUE IN MILLIONS)



### INVESTMENT RETURN HISTORY

#### 29 years 2013

9.31%

#### 28 years 2012

8.93%

#### 27 years 2011

8.70%

#### 10 years 2013

8.44%

#### 10 years 2012

8.17%

#### 10 years 2011

6.21%

#### 5 years 2013

14.77%

#### 5 years 2012

4.04%

#### 5 years 2011

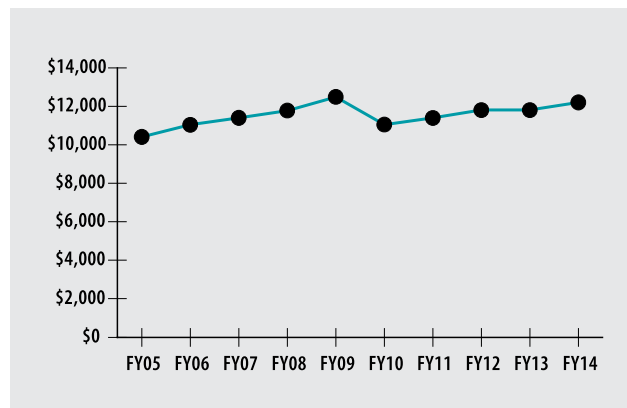
3.44%

## ACTUARIAL

▶ Funded Ratio	57.7%
▶ Date of Last Valuation	01/13
▶ Actuary	Sherman Actuarial Services, LLC
▶ Assumed Rate of Return	8.25%
▶ Funding Schedule	4.0% Increasing Phase-in
▶ Year Fully Funded	2034
▶ Unfunded Liability	\$141.8 M
▶ Total Pension Appropriation (Fiscal 2014)	\$12.2 M

	ACTIVE	RETIRED
▶ Number of Members	1,132	870
▶ Total Payroll/Benefit	\$60.6 M	\$20.6 M
▶ Average Salary/Benefit	\$53,500	\$23,600
▶ Average Age	NA	75
▶ Average Service	NA	NA

## 10-YEAR HISTORY OF APPROPRIATIONS (IN THOUSANDS)

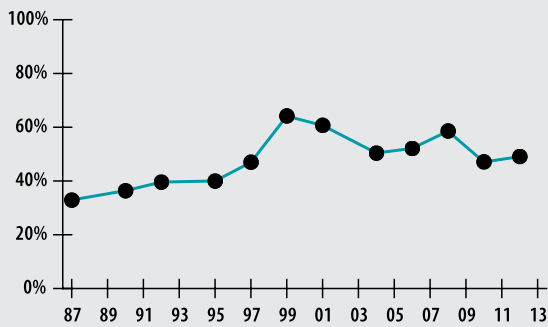


## EARNED INCOME OF DISABILITY RETIREES (2012)

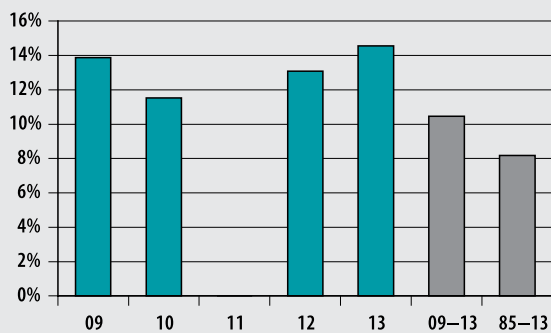
▶ Number of Disability Retirees	124
▶ Number Who Reported Earnings	25
▶ Number of Excess Earners	1
▶ Total Amount of Refund Due	\$23,898

▶ 2013 Return	20.40%
▶ 2013 Market Value	\$234.8 M
▶ 2009-2013 (Annualized)	14.77%
▶ 1985-2013 (Annualized)	9.31%

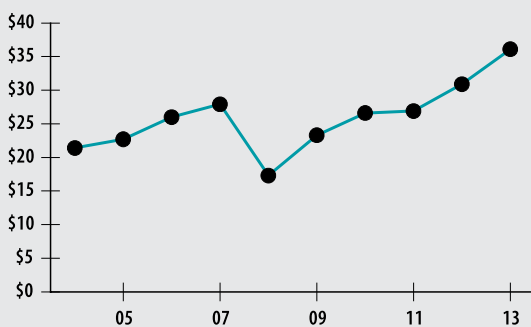
## FUNDED RATIO (1987-2013)



## INVESTMENT RETURN (2009-2013, 5 YEAR AND 29 YEAR AVERAGES)



## ASSET GROWTH (2004-2013) (MARKET VALUE IN MILLIONS)



## INVESTMENT RETURN HISTORY

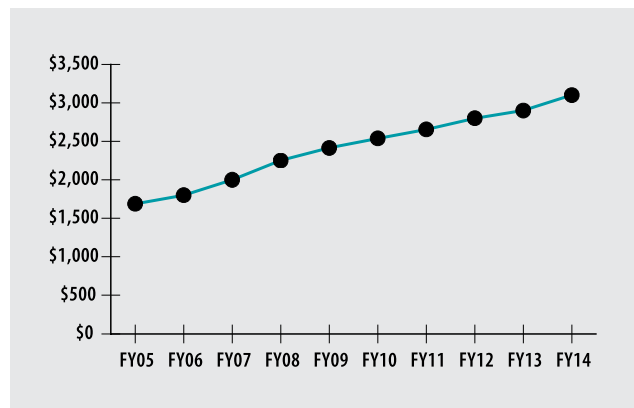
<b>29 years 2013</b> 8.17%	<b>28 years 2012</b> 7.95%	<b>27 years 2011</b> 7.77%
<b>10 years 2013</b> 4.90%	<b>10 years 2012</b> 5.26%	<b>10 years 2011</b> 3.40%
<b>5 years 2013</b> 10.47%	<b>5 years 2012</b> 0.01%	<b>5 years 2011</b> -1.16%

## ACTUARIAL

▶ Funded Ratio	49.1%
▶ Date of Last Valuation	01/12
▶ Actuary	PERAC
▶ Assumed Rate of Return	8.00%
▶ Funding Schedule	4.0% Increasing Phase-in
▶ Year Fully Funded	2038
▶ Unfunded Liability	\$30.7 M
▶ Total Pension Appropriation (Fiscal 2014)	\$3.1 M

	ACTIVE	RETIRED
▶ Number of Members	339	166
▶ Total Payroll/Benefit	\$13.1 M	\$3.0 M
▶ Average Salary/Benefit	\$38,800	\$18,000
▶ Average Age	46	73
▶ Average Service	10.3 years	NA

## 10-YEAR HISTORY OF APPROPRIATIONS (IN THOUSANDS)



## EARNED INCOME OF DISABILITY RETIREES (2012)

▶ Number of Disability Retirees	16
▶ Number Who Reported Earnings	5
▶ Number of Excess Earners	0
▶ Total Amount of Refund Due	\$0

▶ 2013 Return	14.55%
▶ 2013 Market Value	\$36.1 M
▶ 2009-2013 (Annualized)	10.47%
▶ 1985-2013 (Annualized)	8.17%

## Board Members

Thomas M. Scanlon (Chairperson),  
Patrick Burns, Haskell O. Kennedy, Jr., Ed. D.,  
Philip Mantoni, Robert P. Moynihan

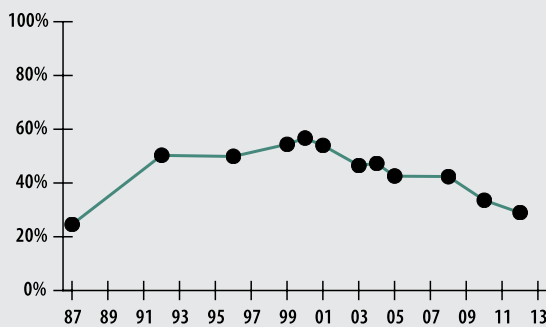
## Board Administrator

Anne C. Leduc

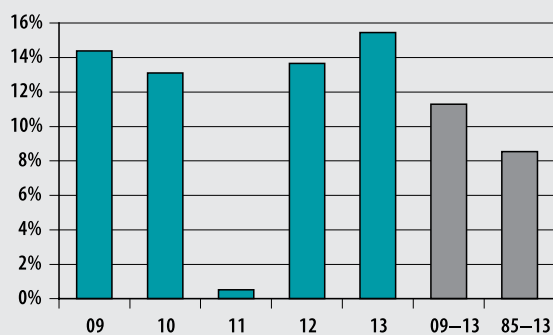
## Board Meeting

Second Wednesday of the month

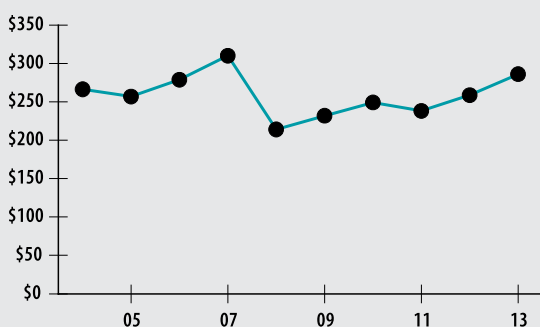
### FUNDED RATIO (1987-2013)



### INVESTMENT RETURN (2009-2013, 5 YEAR AND 29 YEAR AVERAGES)



### ASSET GROWTH (2004-2013) (MARKET VALUE IN MILLIONS)



### INVESTMENT RETURN HISTORY

**29 years 2013**  
8.54%

**28 years 2012**  
8.30%

**27 years 2011**  
8.11%

**10 years 2013**  
6.56%

**10 years 2012**  
7.06%

**10 years 2011**  
4.20%

**5 years 2013**  
11.29%

**5 years 2012**  
1.09%

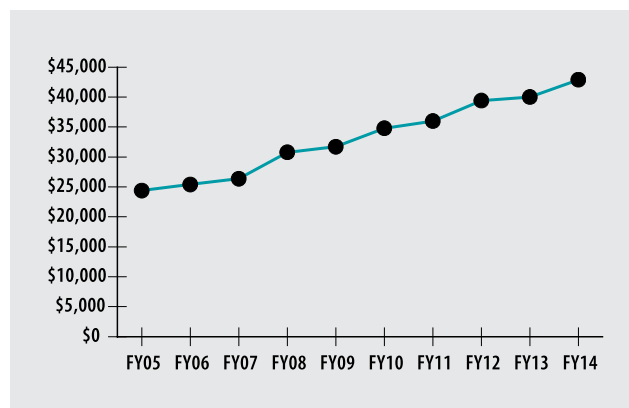
**5 years 2011**  
0.78%

## ACTUARIAL

▶ Funded Ratio	29.0%
▶ Date of Last Valuation	01/12
▶ Actuary	PERAC
▶ Assumed Rate of Return	8.13%
▶ Funding Schedule	6.0% Total Increasing
▶ Year Fully Funded	2037
▶ Unfunded Liability	\$657.2 M
▶ Total Pension Appropriation (Fiscal 2014)	\$42.9 M

	ACTIVE	RETIRED
▶ Number of Members	3,208	2,688
▶ Total Payroll/Benefit	\$134.8 M	\$57.2 M
▶ Average Salary/Benefit	\$42,000	\$21,300
▶ Average Age	46	72
▶ Average Service	13.0 years	NA

## 10-YEAR HISTORY OF APPROPRIATIONS (IN THOUSANDS)



## EARNED INCOME OF DISABILITY RETIREES (2012)

▶ Number of Disability Retirees	451
▶ Number Who Reported Earnings	117
▶ Number of Excess Earners	11
▶ Total Amount of Refund Due	\$80,372

▶ 2013 Return	15.46%
▶ 2013 Market Value	\$286.0 M
▶ 2009-2013 (Annualized)	11.29%
▶ 1985-2013 (Annualized)	8.54%

## State

Boston Office  
One Winter Street, 8<sup>th</sup> floor  
Boston, MA 02108  
Phone 617-367-7770  
Fax 617-723-1438

### Board Members

Treasurer Steven Grossman (Chairperson),  
Christopher S. Condon, Patricia Deal,  
Theresa McGoldrick, Esq., Ralph White

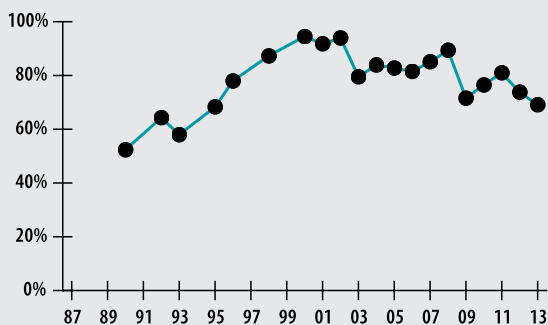
### Board Administrator

Nicola Favorito, Esq.

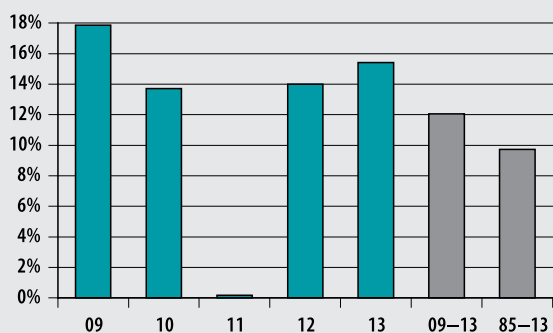
### Board Meeting

Last Thursday of each month

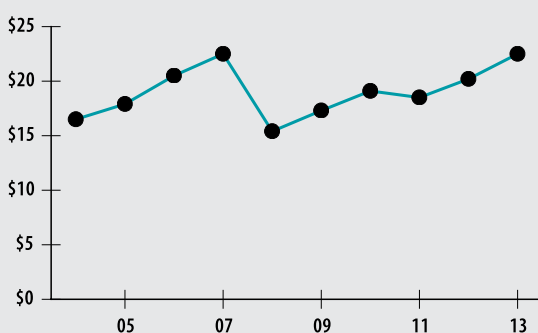
### FUNDED RATIO (1987-2013)



### INVESTMENT RETURN (2009-2013, 5 YEAR AND 29 YEAR AVERAGES)



### ASSET GROWTH (2004-2013) (MARKET VALUE IN BILLIONS)



### INVESTMENT RETURN HISTORY

#### 29 years 2013

9.74%

#### 28 years 2012

9.54%

#### 27 years 2011

9.38%

#### 10 years 2013

7.72%

#### 10 years 2012

8.71%

#### 10 years 2011

6.29%

#### 5 years 2013

12.05%

#### 5 years 2012

1.52%

#### 5 years 2011

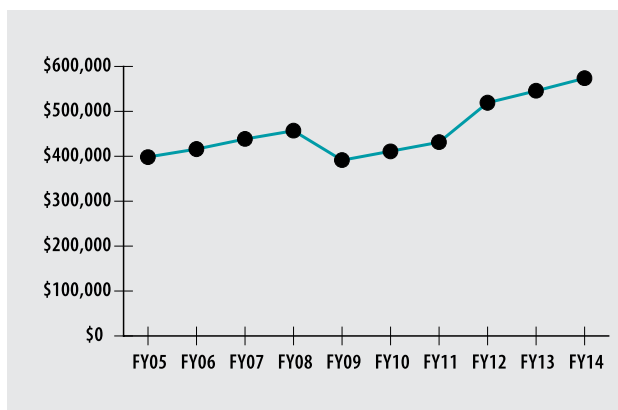
1.17%

## ACTUARIAL

▶ Funded Ratio	69.1%
▶ Date of Last Valuation	01/13
▶ Actuary	PERAC
▶ Assumed Rate of Return	8.00%
▶ Funding Schedule	Varies Total Increasing
▶ Year Fully Funded	2036
▶ Unfunded Liability	\$9.1 B
▶ Total Pension Appropriation (Fiscal 2014)	\$573.4 M

	ACTIVE	RETIRED
▶ Number of Members	87,175	55,383
▶ Total Payroll/Benefit	\$5.2 B	\$1.6 B
▶ Average Salary/Benefit	\$59,500	\$28,600
▶ Average Age	48	72
▶ Average Service	13.5 years	NA

## 10-YEAR HISTORY OF APPROPRIATIONS (IN THOUSANDS)



## EARNED INCOME OF DISABILITY RETIREES (2012)

▶ Number of Disability Retirees	3,751
▶ Number Who Reported Earnings	838
▶ Number of Excess Earners	52
▶ Total Amount of Refund Due	\$431,285

▶ 2013 Return	15.41%
▶ 2013 Market Value	\$22.5 B
▶ 2009-2013 (Annualized)	12.05%
▶ 1985-2013 (Annualized)	9.74%

**Board Members**

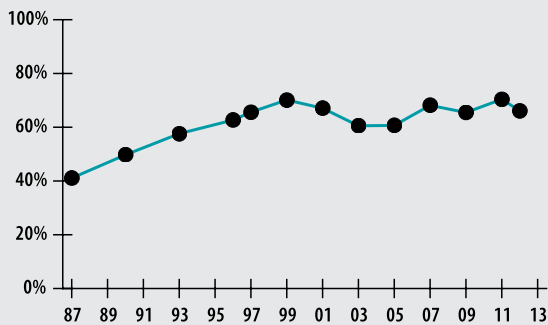
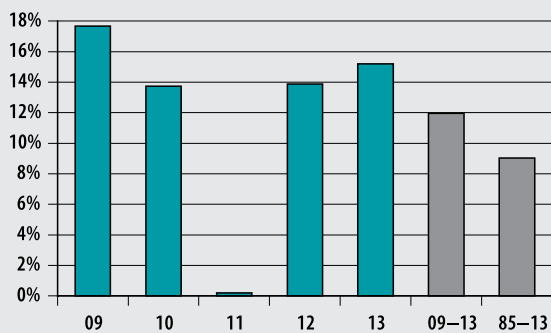
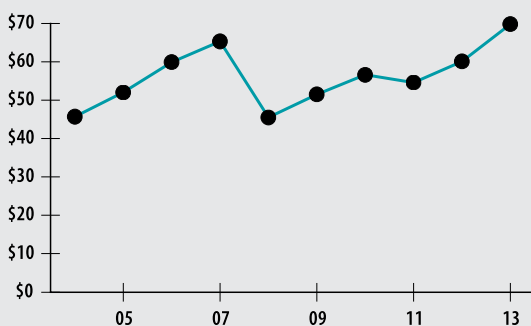
Janice T. Houghton (Chairperson),  
Ronald Florino, James J. McDermott, Jr.,  
Kathleen Sullivan, Elsie M. Wallace

**Board Administrator**

Karen DeAngelis

**Board Meeting**

Last Tuesday of each month at 2:00 pm

**FUNDED RATIO (1987-2013)**

**INVESTMENT RETURN (2009-2013, 5 YEAR AND 29 YEAR AVERAGES)**

**ASSET GROWTH (2004-2013) (MARKET VALUE IN MILLIONS)**

**INVESTMENT RETURN HISTORY**

**29 years 2013**  
9.03%

**28 years 2012**  
8.81%

**27 years 2011**  
8.63%

**10 years 2013**  
7.69%

**10 years 2012**  
8.68%

**10 years 2011**  
6.28%

**5 years 2013**  
11.96%

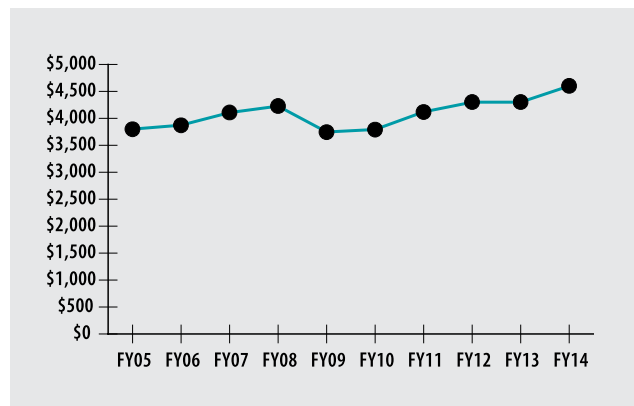
**5 years 2012**  
1.55%

**5 years 2011**  
1.21%

**ACTUARIAL**

▶ Funded Ratio	66.1%
▶ Date of Last Valuation	01/12
▶ Actuary	Stone Consulting
▶ Assumed Rate of Return	8.00%
▶ Funding Schedule	Varies Total Increasing
▶ Year Fully Funded	2023
▶ Unfunded Liability	\$32.1 M
▶ Total Pension Appropriation (Fiscal 2014)	\$4.6 M

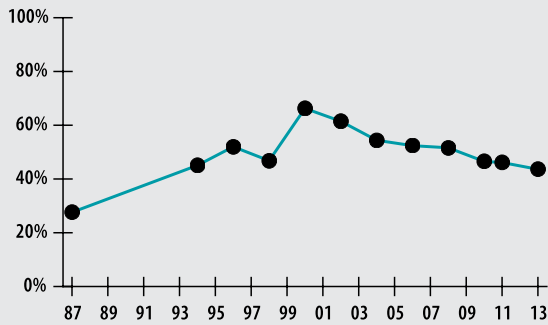
	ACTIVE	RETIRED
▶ Number of Members	256	287
▶ Total Payroll/Benefit	\$11.6 M	\$6.6 M
▶ Average Salary/Benefit	\$45,400	\$23,000
▶ Average Age	49	74
▶ Average Service	13.0 years	NA

**10-YEAR HISTORY OF APPROPRIATIONS (IN THOUSANDS)**

**EARNED INCOME OF DISABILITY RETIREES (2012)**

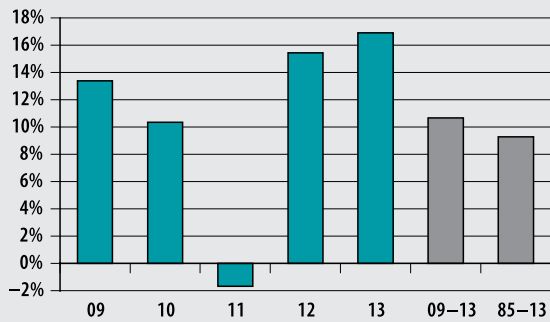
▶ Number of Disability Retirees	26
▶ Number Who Reported Earnings	7
▶ Number of Excess Earners	0
▶ Total Amount of Refund Due	\$0

▶ 2013 Return	15.21%
▶ 2013 Market Value	\$69.8 M
▶ 2009-2013 (Annualized)	11.96%
▶ 1985-2013 (Annualized)	9.03%

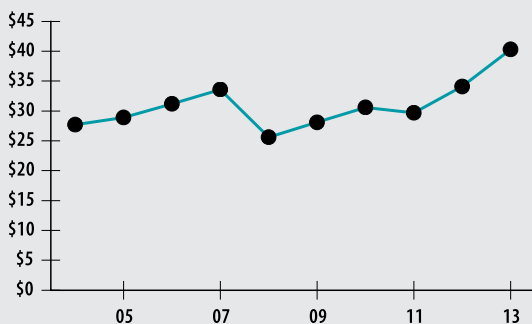
#### FUNDED RATIO (1987-2013)



#### INVESTMENT RETURN (2009-2013, 5 YEAR AND 29 YEAR AVERAGES)



#### ASSET GROWTH (2004-2013) (MARKET VALUE IN MILLIONS)



#### INVESTMENT RETURN HISTORY

<b>29 years 2013</b> 9.29%	<b>28 years 2012</b> 9.03%	<b>27 years 2011</b> 8.79%
<b>10 years 2013</b> 6.79%	<b>10 years 2012</b> 6.63%	<b>10 years 2011</b> 4.49%
<b>5 years 2013</b> 10.68%	<b>5 years 2012</b> 1.76%	<b>5 years 2011</b> 1.05%

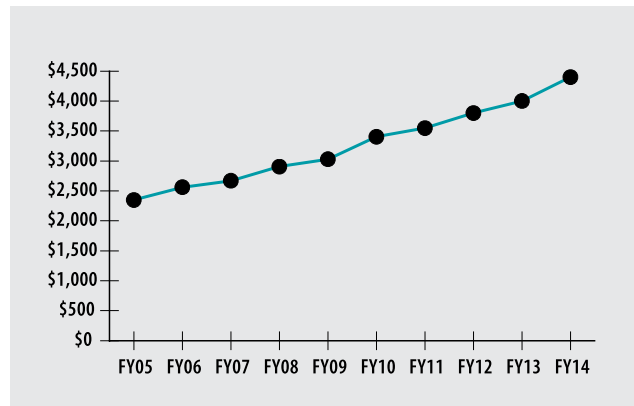
#### ACTUARIAL

▶ Funded Ratio	43.7%
▶ Date of Last Valuation	01/13
▶ Actuary	Stone Consulting
▶ Assumed Rate of Return	8.00%
▶ Funding Schedule	3.93% Increasing
▶ Year Fully Funded	2030
▶ Unfunded Liability	\$43.9 M
▶ Total Pension Appropriation (Fiscal 2014)	\$4.4 M

	ACTIVE	RETIRED
▶ Number of Members	235	204
▶ Total Payroll/Benefit	\$11.2 M	\$4.7 M
▶ Average Salary/Benefit	\$47,600	\$23,000
▶ Average Age	50	74
▶ Average Service	13.5 years	NA

#### 10-YEAR HISTORY OF APPROPRIATIONS (IN THOUSANDS)

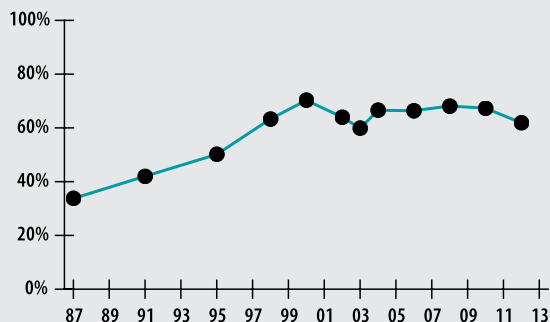


#### EARNED INCOME OF DISABILITY RETIREES (2012)

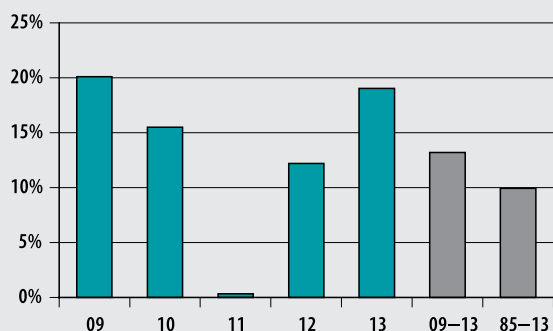
▶ Number of Disability Retirees	26
▶ Number Who Reported Earnings	5
▶ Number of Excess Earners	0
▶ Total Amount of Refund Due	\$0

▶ 2013 Return	16.92%
▶ 2013 Market Value	\$40.3 M
▶ 2009-2013 (Annualized)	10.68%
▶ 1985-2013 (Annualized)	9.29%

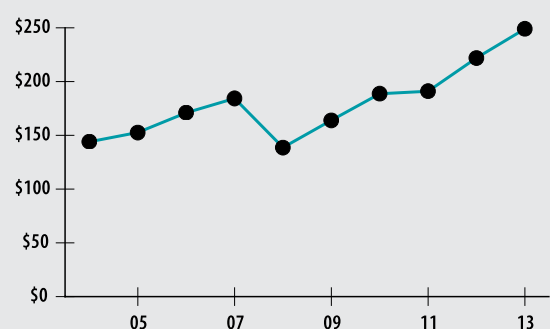
### FUNDED RATIO (1987-2013)



### INVESTMENT RETURN (2009-2013, 5 YEAR AND 29 YEAR AVERAGES)



### ASSET GROWTH (2004-2013) (MARKET VALUE IN MILLIONS)



### INVESTMENT RETURN HISTORY

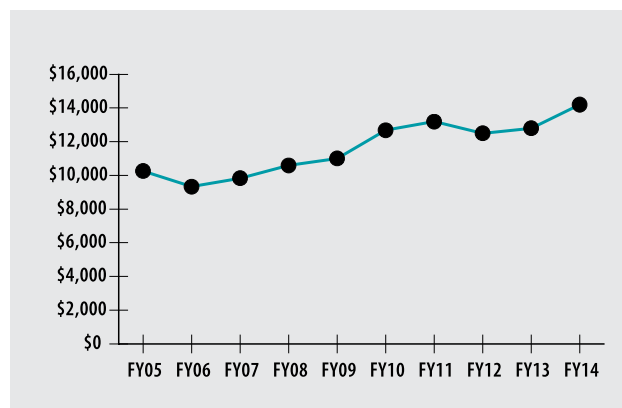
<b>29 years 2013</b> 9.95%	<b>28 years 2012</b> 9.63%	<b>27 years 2011</b> 9.54%
<b>10 years 2013</b> 7.40%	<b>10 years 2012</b> 7.47%	<b>10 years 2011</b> 5.73%
<b>5 years 2013</b> 13.22%	<b>5 years 2012</b> 3.41%	<b>5 years 2011</b> 2.72%

## ACTUARIAL

▶ Funded Ratio	61.9%
▶ Date of Last Valuation	01/12
▶ Actuary	Buck Consultants
▶ Assumed Rate of Return	8.00%
▶ Funding Schedule	4.5% Increasing
▶ Year Fully Funded	2030
▶ Unfunded Liability	\$129.2 M
▶ Total Pension Appropriation (Fiscal 2014)	\$14.2 M

	ACTIVE	RETIRED
▶ Number of Members	1,098	742
▶ Total Payroll/Benefit	\$55.6 M	\$18.1 M
▶ Average Salary/Benefit	\$50,700	\$24,400
▶ Average Age	NA	73
▶ Average Service	NA	NA

## 10-YEAR HISTORY OF APPROPRIATIONS (IN THOUSANDS)



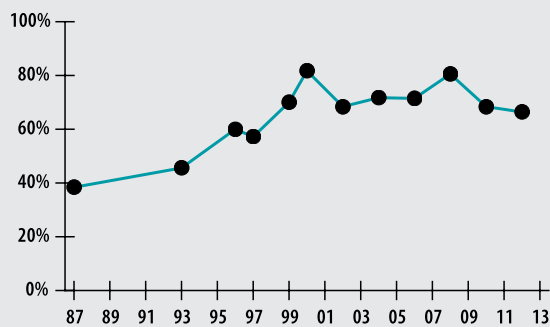
## EARNED INCOME OF DISABILITY RETIREES (2012)

▶ Number of Disability Retirees	92
▶ Number Who Reported Earnings	16
▶ Number of Excess Earners	0
▶ Total Amount of Refund Due	\$0

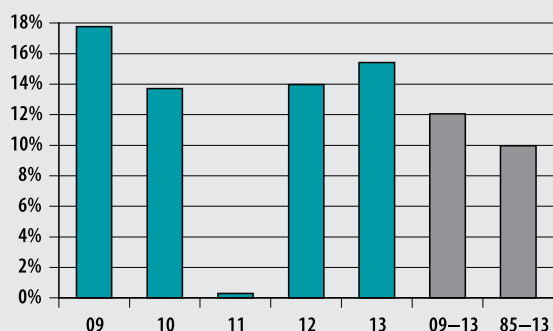
▶ 2013 Return	19.06%
▶ 2013 Market Value	248.9 M
▶ 2009-2013 (Annualized)	13.22%
▶ 1985-2013 (Annualized)	9.95%



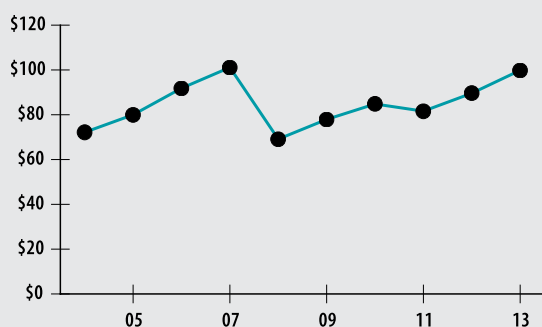
### FUNDED RATIO (1987-2013)



### INVESTMENT RETURN (2009-2013, 5 YEAR AND 29 YEAR AVERAGES)



### ASSET GROWTH (2004-2013) (MARKET VALUE IN MILLIONS)



### INVESTMENT RETURN HISTORY

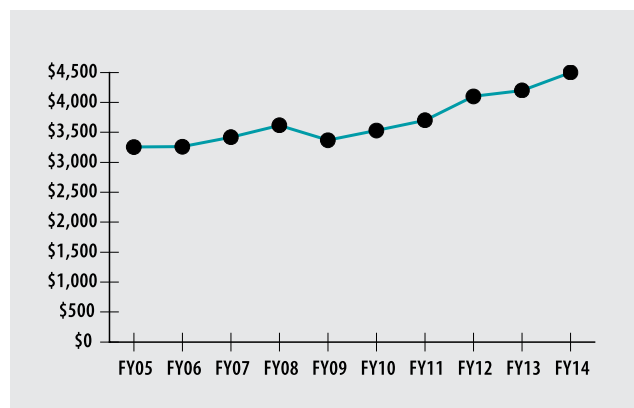
<b>29 years 2013</b> 9.96%	<b>28 years 2012</b> 9.77%	<b>27 years 2011</b> 9.62%
<b>10 years 2013</b> 7.71%	<b>10 years 2012</b> 8.68%	<b>10 years 2011</b> 6.27%
<b>5 years 2013</b> 12.06%	<b>5 years 2012</b> 1.53%	<b>5 years 2011</b> 1.19%

### ACTUARIAL

▶ Funded Ratio	66.5%
▶ Date of Last Valuation	01/12
▶ Actuary	PERAC
▶ Assumed Rate of Return	8.00%
▶ Funding Schedule	4.0% Increasing Phase-in
▶ Year Fully Funded	2038
▶ Unfunded Liability	\$45.0 M
▶ Total Pension Appropriation (Fiscal 2014)	\$4.5 M

	ACTIVE	RETIRED
▶ Number of Members	427	365
▶ Total Payroll/Benefit	\$19.3 M	\$8.6 M
▶ Average Salary/Benefit	\$45,100	\$23,600
▶ Average Age	48	74
▶ Average Service	12.2 years	NA

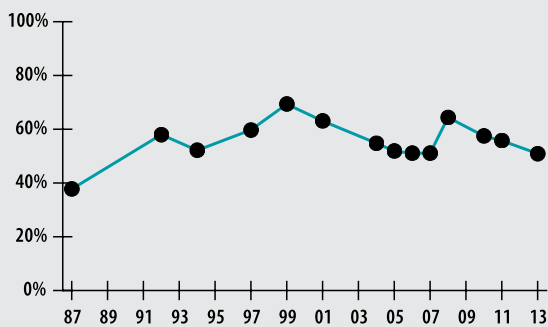
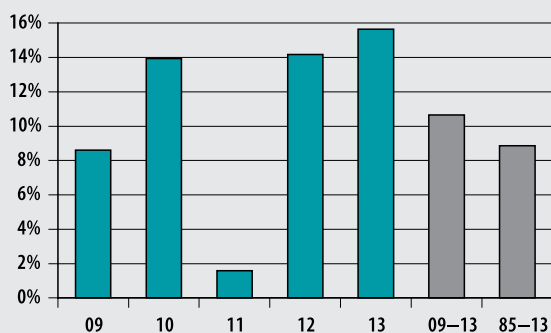
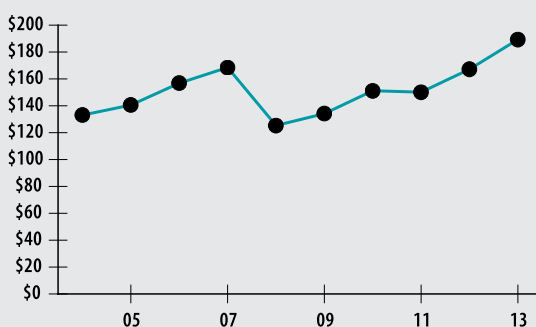
### 10-YEAR HISTORY OF APPROPRIATIONS (IN THOUSANDS)



### EARNED INCOME OF DISABILITY RETIREES (2012)

▶ Number of Disability Retirees	38
▶ Number Who Reported Earnings	9
▶ Number of Excess Earners	0
▶ Total Amount of Refund Due	\$0

▶ 2013 Return	15.43%
▶ 2013 Market Value	\$99.7 M
▶ 2009-2013 (Annualized)	12.06%
▶ 1985-2013 (Annualized)	9.96%

**FUNDED RATIO (1987-2013)**

**INVESTMENT RETURN (2009-2013, 5 YEAR AND 29 YEAR AVERAGES)**

**ASSET GROWTH (2004-2013) (MARKET VALUE IN MILLIONS)**

**INVESTMENT RETURN HISTORY**

**29 years 2013**  
8.86%

**28 years 2012**  
8.62%

**27 years 2011**  
8.42%

**10 years 2013**  
6.37%

**10 years 2012**  
6.95%

**10 years 2011**  
4.43%

**5 years 2013**  
10.66%

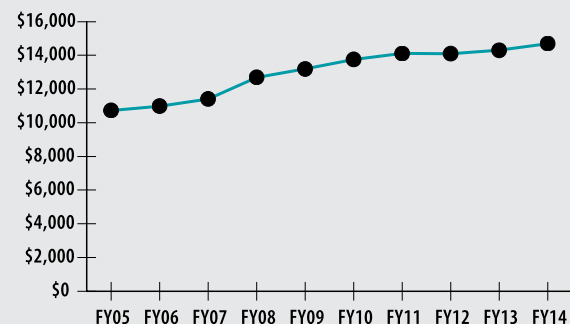
**5 years 2012**  
1.57%

**5 years 2011**  
0.67%

**ACTUARIAL**

▶ Funded Ratio	50.9%
▶ Date of Last Valuation	01/13
▶ Actuary	Sherman Actuarial Services, LLC
▶ Assumed Rate of Return	8.25%
▶ Funding Schedule	4.0% Increasing
▶ Year Fully Funded	2035
▶ Unfunded Liability	\$159.1 M
▶ Total Pension Appropriation (Fiscal 2014)	\$14.7 M

	ACTIVE	RETIRED
▶ Number of Members	887	773
▶ Total Payroll/Benefit	\$50.7 M	\$21.3 M
▶ Average Salary/Benefit	\$57,200	\$27,500
▶ Average Age	NA	73
▶ Average Service	NA	NA

**10-YEAR HISTORY OF APPROPRIATIONS (IN THOUSANDS)**

**EARNED INCOME OF DISABILITY RETIREES (2012)**

▶ Number of Disability Retirees	103
▶ Number Who Reported Earnings	21
▶ Number of Excess Earners	0
▶ Total Amount of Refund Due	\$0

▶ 2013 Return	15.65%
▶ 2013 Market Value	\$189.2 M
▶ 2009-2013 (Annualized)	10.66%
▶ 1985-2013 (Annualized)	8.86%

## Watertown

P. O. Box 199, 149 Main Street  
Watertown, MA 02471-0199  
Phone 617-972-6456,  
888-972-6456 (toll free)  
Fax 617-923-3531

### Board Members

Thomas V. Thibaut, Jr. (Chairperson),  
Domenic D. Arone, Kathleen Kiely-Becchetti,  
John T. Loughran, Thomas J. Tracy

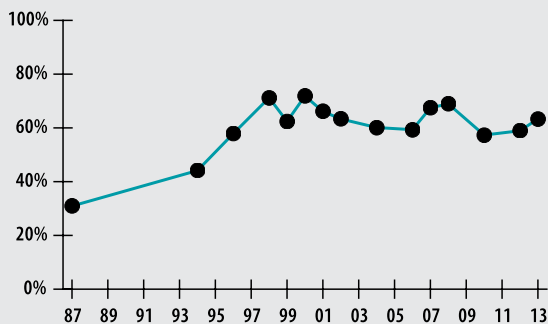
### Board Administrator

Barbara A. Sheehan

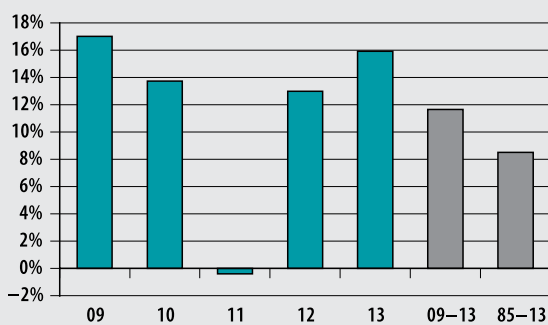
### Board Meeting

Varies

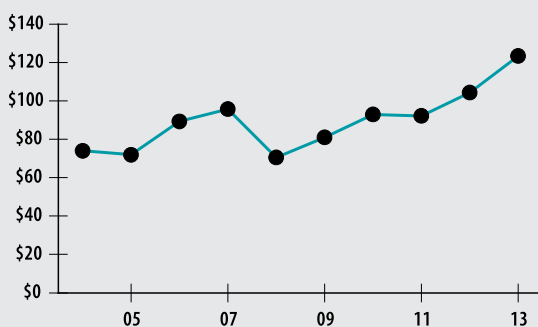
### FUNDED RATIO (1987-2013)



### INVESTMENT RETURN (2009-2013, 5 YEAR AND 29 YEAR AVERAGES)



### ASSET GROWTH (2004-2013) (MARKET VALUE IN MILLIONS)



### INVESTMENT RETURN HISTORY

#### 29 years 2013

8.51%

#### 28 years 2012

8.25%

#### 27 years 2011

8.08%

#### 10 years 2013

6.62%

#### 10 years 2012

7.08%

#### 10 years 2011

4.72%

#### 5 years 2013

11.67%

#### 5 years 2012

2.04%

#### 5 years 2011

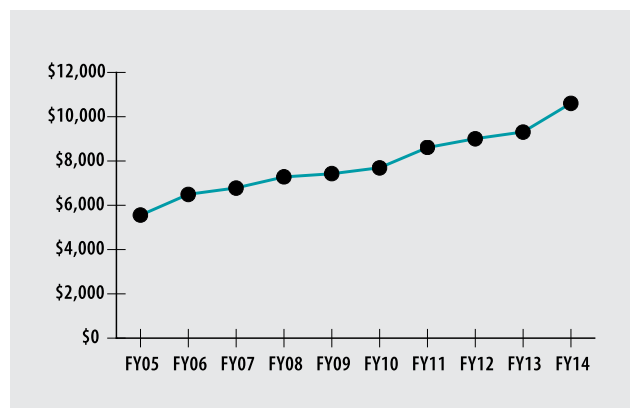
1.07%

## ACTUARIAL

▶ Funded Ratio	63.3%
▶ Date of Last Valuation	01/13
▶ Actuary	Sherman Actuarial Services, LLC
▶ Assumed Rate of Return	8.00%
▶ Funding Schedule	Varies Total Increasing
▶ Year Fully Funded	2019
▶ Unfunded Liability	\$60.6 M
▶ Total Pension Appropriation (Fiscal 2014)	\$10.6 M

	ACTIVE	RETIRED
▶ Number of Members	533	405
▶ Total Payroll/Benefit	\$27.3 M	\$10.6 M
▶ Average Salary/Benefit	\$51,200	\$26,100
▶ Average Age	NA	76
▶ Average Service	NA	NA

## 10-YEAR HISTORY OF APPROPRIATIONS (IN THOUSANDS)



## EARNED INCOME OF DISABILITY RETIREES (2012)

▶ Number of Disability Retirees	55
▶ Number Who Reported Earnings	8
▶ Number of Excess Earners	1
▶ Total Amount of Refund Due	\$1,013

▶ 2013 Return	15.94%
▶ 2013 Market Value	\$123.4 M
▶ 2009-2013 (Annualized)	11.67%
▶ 1985-2013 (Annualized)	8.51%

**Board Members**

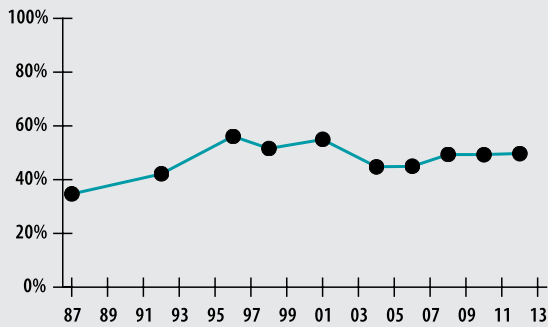
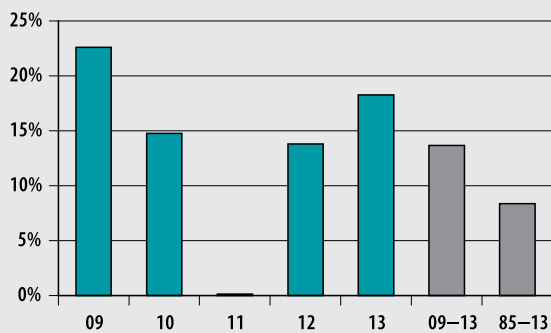
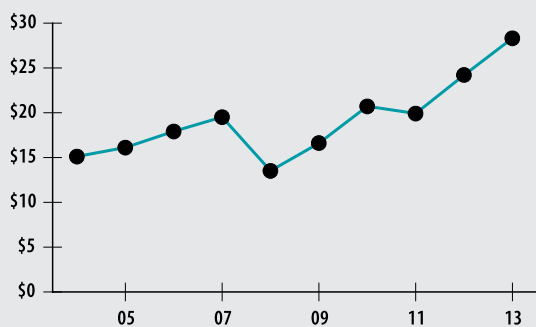
Paul J. Minarik (Chairperson),  
Daniel Bonnette, Eleanor P. Doros,  
Louis T. Polletta, Pamela A. Regis

**Board Administrator**

Gerry Wentworth

**Board Meeting**

Third Wednesday of each month

**FUNDED RATIO (1987-2013)**

**INVESTMENT RETURN (2009-2013, 5 YEAR AND 29 YEAR AVERAGES)**

**ASSET GROWTH (2004-2013) (MARKET VALUE IN MILLIONS)**

**INVESTMENT RETURN HISTORY**
**29 years 2013**

8.38%

**28 years 2012**

8.04%

**27 years 2011**

7.83%

**10 years 2013**

7.62%

**10 years 2012**

7.43%

**10 years 2011**

5.57%

**5 years 2013**

13.67%

**5 years 2012**

3.15%

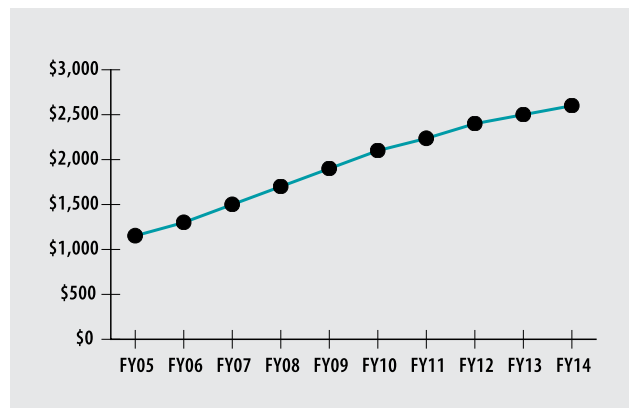
**5 years 2011**

2.13%

**ACTUARIAL**

▶ Funded Ratio	49.7%
▶ Date of Last Valuation	01/12
▶ Actuary	PERAC
▶ Assumed Rate of Return	8.00%
▶ Funding Schedule	4.5% Increasing
▶ Year Fully Funded	2029
▶ Unfunded Liability	\$23.0 M
▶ Total Pension Appropriation (Fiscal 2014)	\$2.6 M

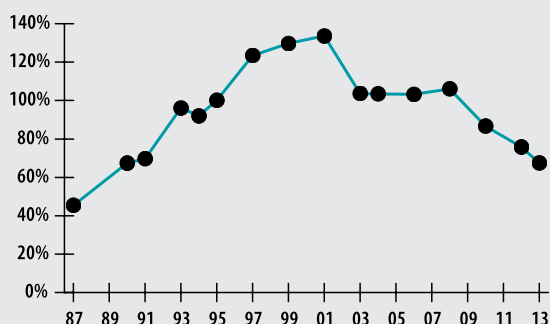
	ACTIVE	RETIRED
▶ Number of Members	243	132
▶ Total Payroll/Benefit	\$8.9 M	\$2.5 M
▶ Average Salary/Benefit	\$36,500	\$18,700
▶ Average Age	47	72
▶ Average Service	11.5 years	NA

**10-YEAR HISTORY OF APPROPRIATIONS (IN THOUSANDS)**

**EARNED INCOME OF DISABILITY RETIREES (2012)**

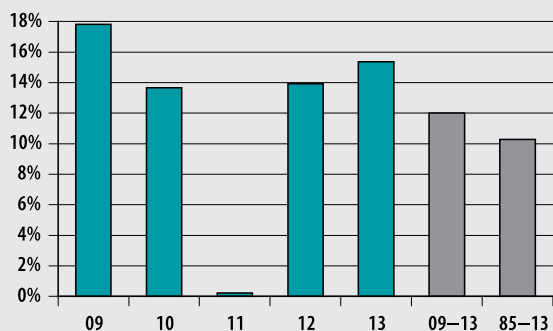
▶ Number of Disability Retirees	12
▶ Number Who Reported Earnings	2
▶ Number of Excess Earners	0
▶ Total Amount of Refund Due	\$0

▶ 2013 Return	18.28%
▶ 2013 Market Value	\$28.3 M
▶ 2009-2013 (Annualized)	13.67%
▶ 1985-2013 (Annualized)	8.38%

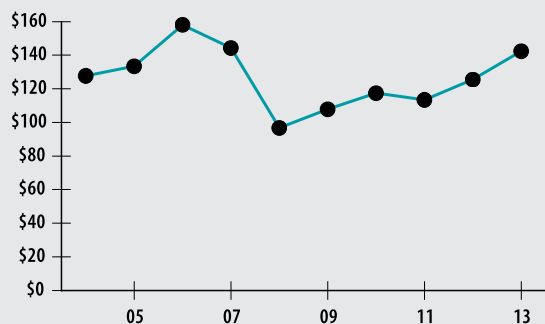
### FUNDED RATIO (1987-2013)



### INVESTMENT RETURN (2009-2013, 5 YEAR AND 29 YEAR AVERAGES)



### ASSET GROWTH (2004-2013) (MARKET VALUE IN MILLIONS)



### INVESTMENT RETURN HISTORY

**29 years 2013**  
10.29%

**28 years 2012**  
10.11%

**27 years 2011**  
9.97%

**10 years 2013**  
6.88%

**10 years 2012**  
7.37%

**10 years 2011**  
5.36%

**5 years 2013**  
12.02%

**5 years 2012**  
1.55%

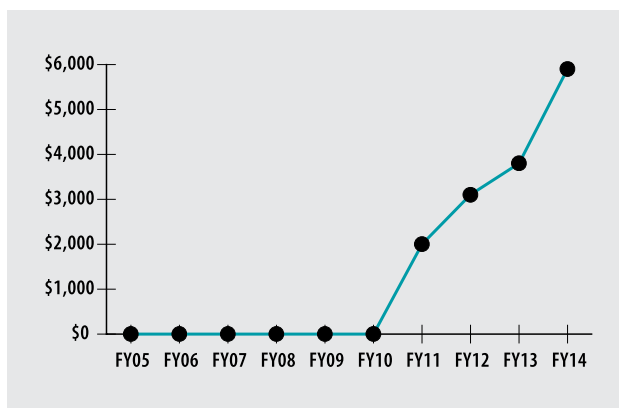
**5 years 2011**  
0.55%

### ACTUARIAL

▶ Funded Ratio	67.5%
▶ Date of Last Valuation	01/13
▶ Actuary	The Segal Company
▶ Assumed Rate of Return	7.00%
▶ Funding Schedule	3.5% Increasing Phase-in
▶ Year Fully Funded	2030
▶ Unfunded Liability	\$60.5 M
▶ Total Pension Appropriation (Fiscal 2014)	\$5.9 M

	ACTIVE	RETIRED
▶ Number of Members	668	407
▶ Total Payroll/Benefit	\$34.0 M	\$9.6 M
▶ Average Salary/Benefit	\$51,000	\$23,500
▶ Average Age	46	NA
▶ Average Service	10.8 years	NA

### 10-YEAR HISTORY OF APPROPRIATIONS (IN THOUSANDS)

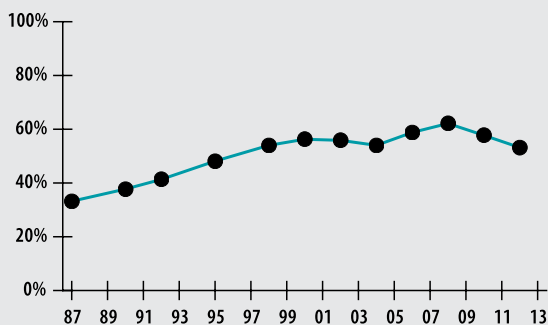


### EARNED INCOME OF DISABILITY RETIREES (2012)

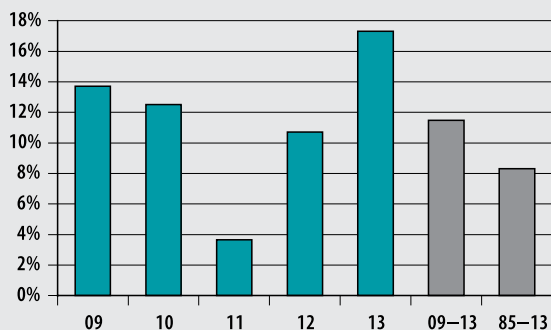
▶ Number of Disability Retirees	35
▶ Number Who Reported Earnings	8
▶ Number of Excess Earners	1
▶ Total Amount of Refund Due	\$497

▶ 2013 Return	15.38%
▶ 2013 Market Value	\$142.4 M
▶ 2009-2013 (Annualized)	12.02%
▶ 1985-2013 (Annualized)	10.29%

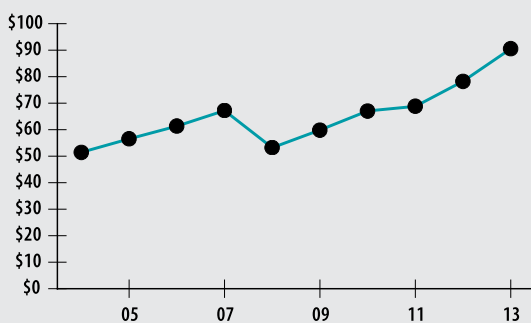
#### FUNDED RATIO (1987-2013)



#### INVESTMENT RETURN (2009-2013, 5 YEAR AND 29 YEAR AVERAGES)



#### ASSET GROWTH (2004-2013) (MARKET VALUE IN MILLIONS)



#### INVESTMENT RETURN HISTORY

**29 years 2013**  
8.32%

**28 years 2012**  
8.02%

**27 years 2011**  
7.92%

**10 years 2013**  
6.61%

**10 years 2012**  
6.44%

**10 years 2011**  
4.70%

**5 years 2013**  
11.49%

**5 years 2012**  
2.77%

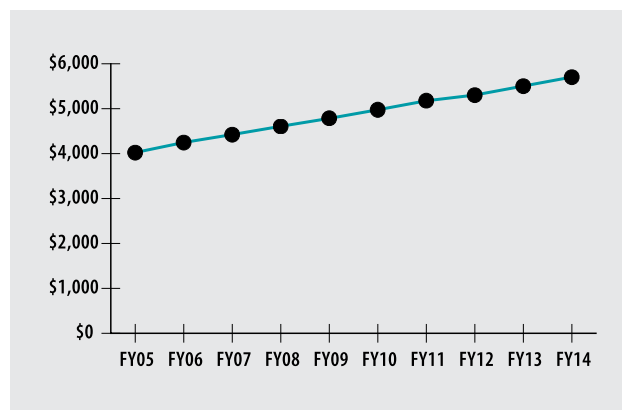
**5 years 2011**  
2.54%

#### ACTUARIAL

▶ Funded Ratio	53.2%
▶ Date of Last Valuation	01/12
▶ Actuary	Stone Consulting
▶ Assumed Rate of Return	7.75%
▶ Funding Schedule	3.75% Increasing
▶ Year Fully Funded	2035
▶ Unfunded Liability	\$63.5 M
▶ Total Pension Appropriation (Fiscal 2014)	\$5.7 M

	ACTIVE	RETIRED
▶ Number of Members	570	375
▶ Total Payroll/Benefit	\$23.4 M	\$7.2 M
▶ Average Salary/Benefit	\$41,000	\$19,300
▶ Average Age	47	73
▶ Average Service	12.3 years	NA

#### 10-YEAR HISTORY OF APPROPRIATIONS (IN THOUSANDS)

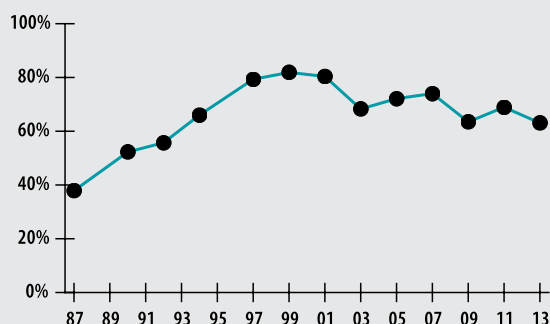


#### EARNED INCOME OF DISABILITY RETIREES (2012)

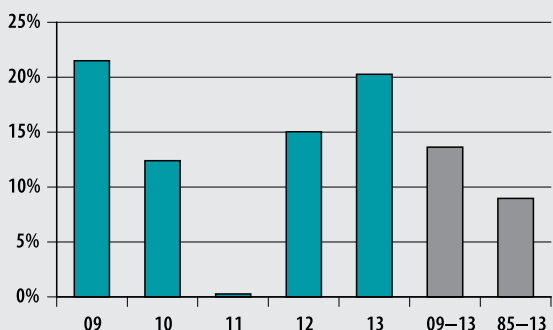
▶ Number of Disability Retirees	40
▶ Number Who Reported Earnings	10
▶ Number of Excess Earners	2
▶ Total Amount of Refund Due	\$11,065

▶ 2013 Return	17.31%
▶ 2013 Market Value	\$90.5 M
▶ 2009-2013 (Annualized)	11.49%
▶ 1985-2013 (Annualized)	8.32%

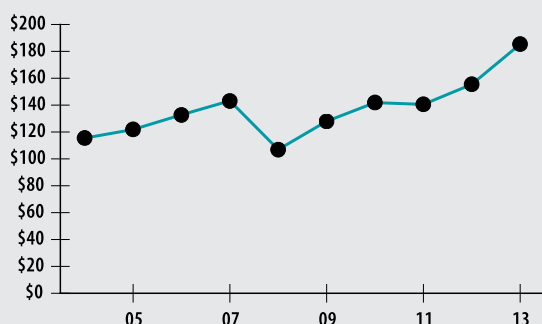
### FUNDED RATIO (1987-2013)



### INVESTMENT RETURN (2009-2013, 5 YEAR AND 29 YEAR AVERAGES)



### ASSET GROWTH (2004-2013) (MARKET VALUE IN MILLIONS)



### INVESTMENT RETURN HISTORY

**29 years 2013**  
8.97%

**28 years 2012**  
8.59%

**27 years 2011**  
8.36%

**10 years 2013**  
7.27%

**10 years 2012**  
7.21%

**10 years 2011**  
4.31%

**5 years 2013**  
13.64%

**5 years 2012**  
3.41%

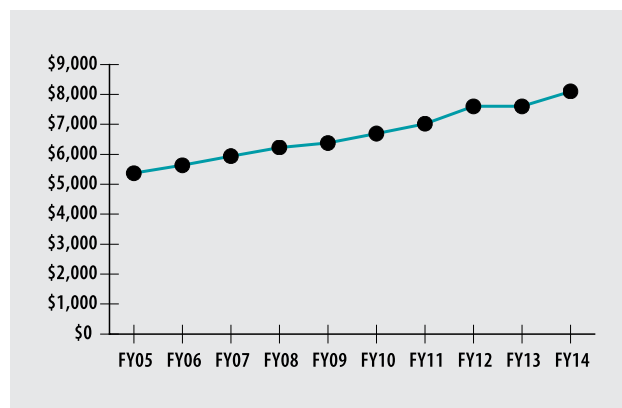
**5 years 2011**  
1.94%

### ACTUARIAL

▶ Funded Ratio	63.1%
▶ Date of Last Valuation	01/13
▶ Actuary	PERAC
▶ Assumed Rate of Return	7.75%
▶ Funding Schedule	5.0% Total Increasing
▶ Year Fully Funded	2036
▶ Unfunded Liability	\$88.7 M
▶ Total Pension Appropriation (Fiscal 2014)	\$8.1 M

	ACTIVE	RETIRED
▶ Number of Members	860	604
▶ Total Payroll/Benefit	\$35.6 M	\$13.6 M
▶ Average Salary/Benefit	\$41,400	\$22,600
▶ Average Age	48	72
▶ Average Service	12.3 years	NA

### 10-YEAR HISTORY OF APPROPRIATIONS (IN THOUSANDS)

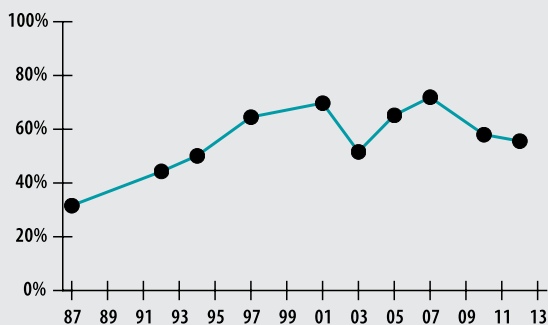


### EARNED INCOME OF DISABILITY RETIREES (2012)

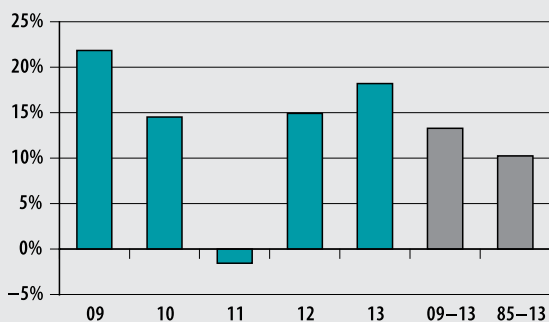
▶ Number of Disability Retirees	60
▶ Number Who Reported Earnings	13
▶ Number of Excess Earners	0
▶ Total Amount of Refund Due	\$0

▶ 2013 Return	20.27%
▶ 2013 Market Value	\$185.3 M
▶ 2009-2013 (Annualized)	13.64%
▶ 1985-2013 (Annualized)	8.97%

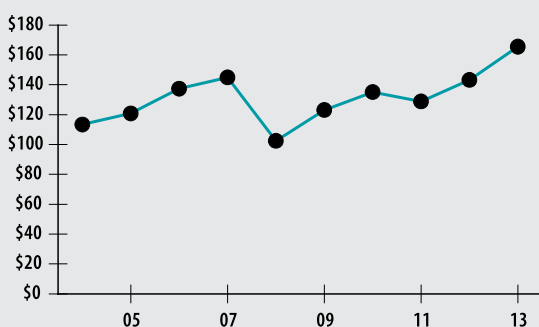
### FUNDED RATIO (1987-2013)



### INVESTMENT RETURN (2009-2013, 5 YEAR AND 29 YEAR AVERAGES)



### ASSET GROWTH (2004-2013) (MARKET VALUE IN MILLIONS)



### INVESTMENT RETURN HISTORY

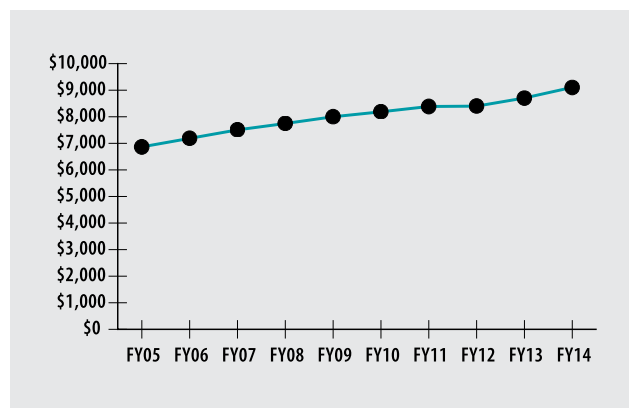
<b>29 years 2013</b>	<b>28 years 2012</b>	<b>27 years 2011</b>
10.26%	9.99%	9.81%
<b>10 years 2013</b>	<b>10 years 2012</b>	<b>10 years 2011</b>
7.62%	8.29%	5.82%
<b>5 years 2013</b>	<b>5 years 2012</b>	<b>5 years 2011</b>
13.29%	2.61%	1.25%

### ACTUARIAL

▶ Funded Ratio	55.6%
▶ Date of Last Valuation	01/12
▶ Actuary	Stone Consulting
▶ Assumed Rate of Return	7.88%
▶ Funding Schedule	3.61% Increasing
▶ Year Fully Funded	2035
▶ Unfunded Liability	\$103.1 M
▶ Total Pension Appropriation (Fiscal 2014)	\$9.1 M

	ACTIVE	RETIRED
▶ Number of Members	810	628
▶ Total Payroll/Benefit	\$34.8 M	\$14.8 M
▶ Average Salary/Benefit	\$43,000	\$23,600
▶ Average Age	49	74
▶ Average Service	11.5 years	NA

### 10-YEAR HISTORY OF APPROPRIATIONS (IN THOUSANDS)



### EARNED INCOME OF DISABILITY RETIREES (2012)

▶ Number of Disability Retirees	99
▶ Number Who Reported Earnings	26
▶ Number of Excess Earners	1
▶ Total Amount of Refund Due	\$814

▶ 2013 Return	18.20%
▶ 2013 Market Value	\$165.5 M
▶ 2009-2013 (Annualized)	13.29%
▶ 1985-2013 (Annualized)	10.26%



**Board Members**

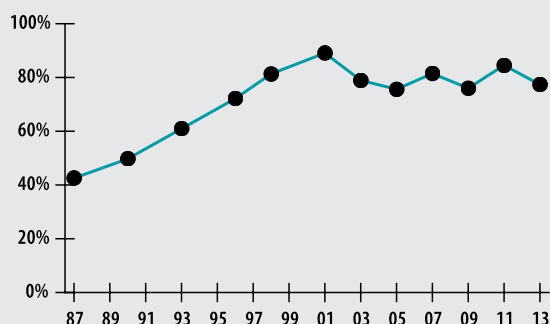
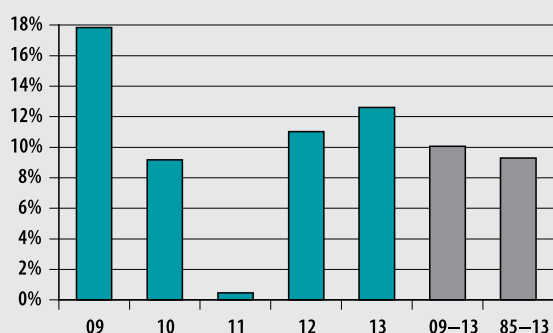
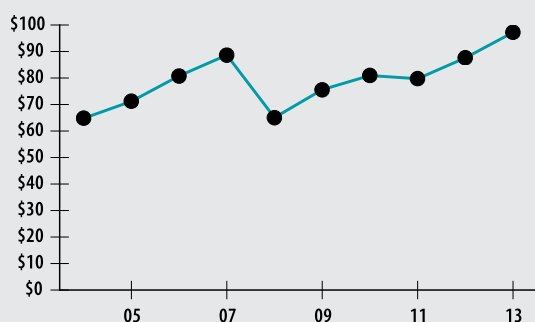
George F. Morrissey, Esq., (Chairperson),  
Paul J. DeLuca, James B. Gray, Stacie Ward,  
William Zink

**Board Administrator**

Karen Manchuso

**Board Meeting**

Varies

**FUNDED RATIO (1987-2013)**

**INVESTMENT RETURN (2009-2013, 5 YEAR AND 29 YEAR AVERAGES)**

**ASSET GROWTH (2004-2013) (MARKET VALUE IN MILLIONS)**

**INVESTMENT RETURN HISTORY**
**29 years 2013**

9.31%

**28 years 2012**

9.19%

**27 years 2011**

9.13%

**10 years 2013**

6.75%

**10 years 2012**

7.73%

**10 years 2011**

5.73%

**5 years 2013**

10.07%

**5 years 2012**

1.28%

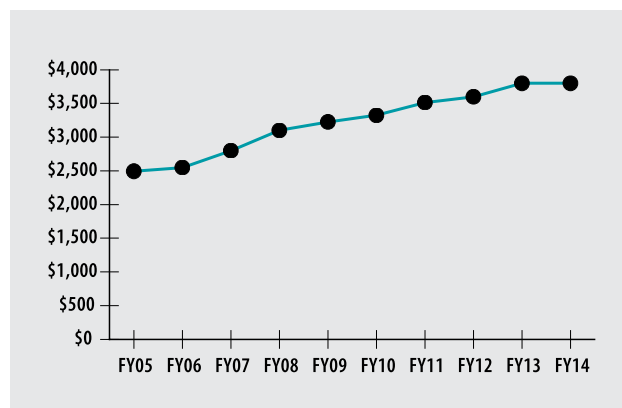
**5 years 2011**

1.30%

**ACTUARIAL**

▶ Funded Ratio	77.4%
▶ Date of Last Valuation	01/13
▶ Actuary	PERAC
▶ Assumed Rate of Return	7.75%
▶ Funding Schedule	2.5% Increasing
▶ Year Fully Funded	2029
▶ Unfunded Liability	\$25.5 M
▶ Total Pension Appropriation (Fiscal 2014)	\$3.8 M

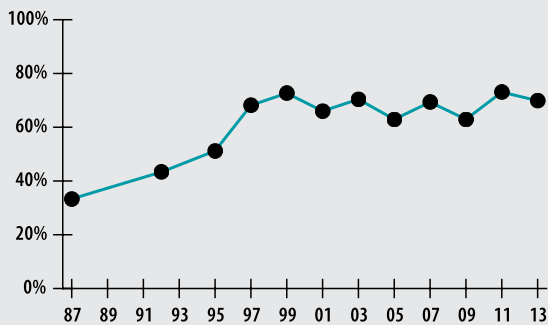
	ACTIVE	RETIRED
▶ Number of Members	366	278
▶ Total Payroll/Benefit	\$18.0 M	\$6.2 M
▶ Average Salary/Benefit	\$49,100	\$22,400
▶ Average Age	49	76
▶ Average Service	13.5 years	NA

**10-YEAR HISTORY OF APPROPRIATIONS (IN THOUSANDS)**

**EARNED INCOME OF DISABILITY RETIREES (2012)**

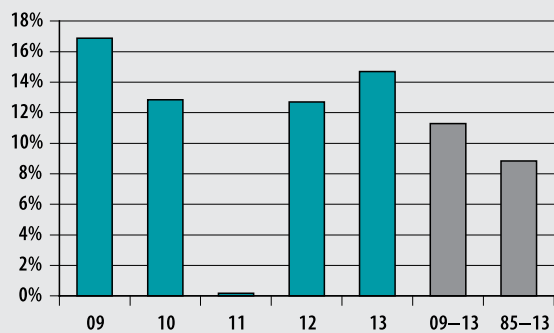
▶ Number of Disability Retirees	29
▶ Number Who Reported Earnings	6
▶ Number of Excess Earners	1
▶ Total Amount of Refund Due	\$2,748

▶ 2013 Return	12.62%
▶ 2013 Market Value	\$97.2 M
▶ 2009-2013 (Annualized)	10.07%
▶ 1985-2013 (Annualized)	9.31%

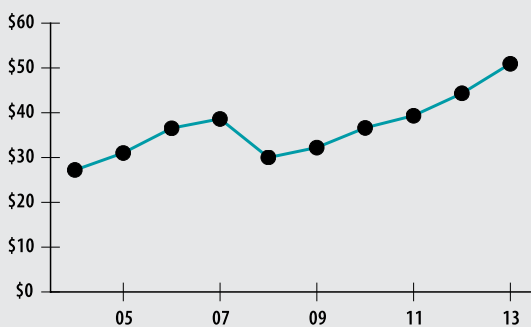
## FUNDED RATIO (1987-2013)



## INVESTMENT RETURN (2009-2013, 5 YEAR AND 29 YEAR AVERAGES)



## ASSET GROWTH (2004-2013) (MARKET VALUE IN MILLIONS)



## INVESTMENT RETURN HISTORY

**29 years 2013**  
8.85%

**28 years 2012**  
8.65%

**27 years 2011**  
8.50%

**10 years 2013**  
7.19%

**10 years 2012**  
7.78%

**10 years 2011**  
5.14%

**5 years 2013**  
11.30%

**5 years 2012**  
1.39%

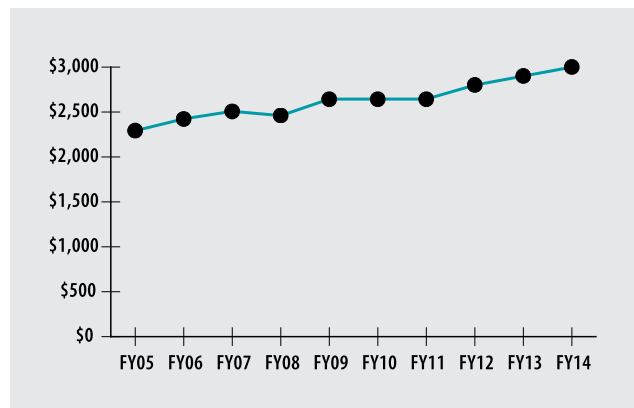
**5 years 2011**  
1.23%

## ACTUARIAL

▶ Funded Ratio	69.9%
▶ Date of Last Valuation	01/13
▶ Actuary	PERAC
▶ Assumed Rate of Return	7.75%
▶ Funding Schedule	2.0% Increasing
▶ Year Fully Funded	2028
▶ Unfunded Liability	\$18.9 M
▶ Total Pension Appropriation (Fiscal 2014)	\$3.0 M

	ACTIVE	RETIRED
▶ Number of Members	228	179
▶ Total Payroll/Benefit	\$10.2 M	\$3.4 M
▶ Average Salary/Benefit	\$44,700	\$19,100
▶ Average Age	50	74
▶ Average Service	13.5 years	NA

## 10-YEAR HISTORY OF APPROPRIATIONS (IN THOUSANDS)



## EARNED INCOME OF DISABILITY RETIREES (2012)

▶ Number of Disability Retirees	19
▶ Number Who Reported Earnings	3
▶ Number of Excess Earners	0
▶ Total Amount of Refund Due	\$0

▶ 2013 Return	14.69%
▶ 2013 Market Value	\$50.9 M
▶ 2009-2013 (Annualized)	11.30%
▶ 1985-2013 (Annualized)	8.85%

## Woburn

City Hall, Second Floor  
10 Common Street  
Woburn, MA 01801-4139  
Phone 781-897-5820  
Fax 781-897-5824

### Board Members

Gerald W. Surette (Chairperson),  
Denis P. Devine, A. John Flaherty,  
Michael J. Gorman, Marilou E. Lundin

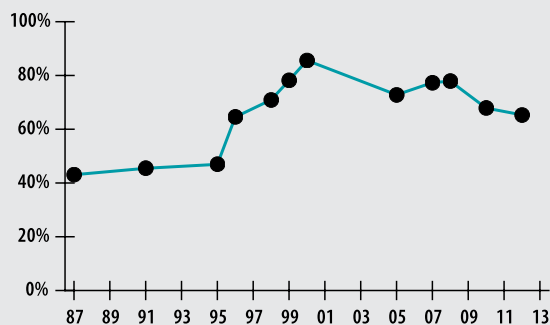
### Board Administrator

Maureen T. Marcucci

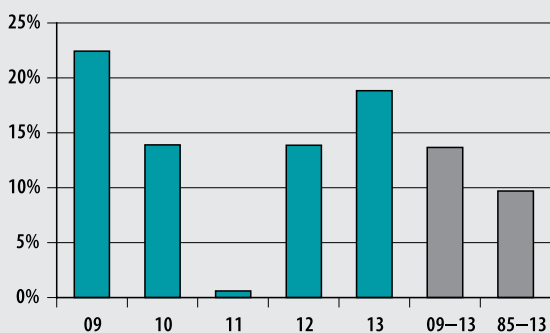
### Board Meeting

Varies

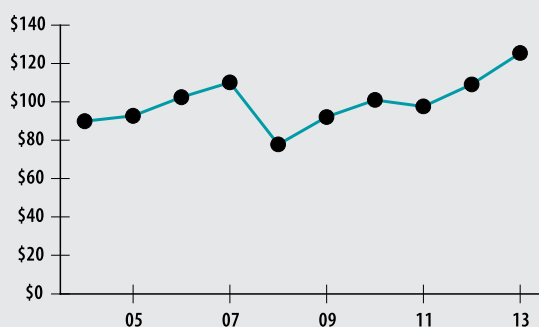
### FUNDED RATIO (1987-2013)



### INVESTMENT RETURN (2009-2013, 5 YEAR AND 29 YEAR AVERAGES)



### ASSET GROWTH (2004-2013) (MARKET VALUE IN MILLIONS)



### INVESTMENT RETURN HISTORY

**29 years 2013**  
9.72%

**28 years 2012**  
9.41%

**27 years 2011**  
9.25%

**10 years 2013**  
7.71%

**10 years 2012**  
8.16%

**10 years 2011**  
5.63%

**5 years 2013**  
13.69%

**5 years 2012**  
3.24%

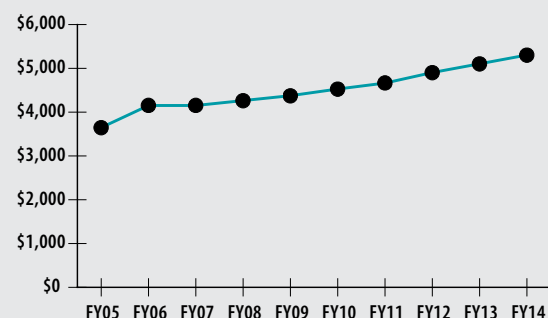
**5 years 2011**  
2.64%

## ACTUARIAL

▶ Funded Ratio	65.3%
▶ Date of Last Valuation	01/12
▶ Actuary	Buck Consultants
▶ Assumed Rate of Return	8.25%
▶ Funding Schedule	4.0% Increasing
▶ Year Fully Funded	2036
▶ Unfunded Liability	\$56.5 M
▶ Total Pension Appropriation (Fiscal 2014)	\$5.3 M

	ACTIVE	RETIRED
▶ Number of Members	563	397
▶ Total Payroll/Benefit	\$27.7 M	\$8.5 M
▶ Average Salary/Benefit	\$49,200	\$21,400
▶ Average Age	NA	74
▶ Average Service	NA	NA

## 10-YEAR HISTORY OF APPROPRIATIONS (IN THOUSANDS)



## EARNED INCOME OF DISABILITY RETIREES (2012)

▶ Number of Disability Retirees	33
▶ Number Who Reported Earnings	7
▶ Number of Excess Earners	0
▶ Total Amount of Refund Due	\$0

▶ 2013 Return	18.84%
▶ 2013 Market Value	\$125.4 M
▶ 2009-2013 (Annualized)	13.69%
▶ 1985-2013 (Annualized)	9.72%

## Worcester

City Hall, Room 103  
455 Main Street  
Worcester, MA 01608  
Phone 508-799-1062  
Fax 508-799-1047

### Board Members

Stephen F. Wentzell (Chairperson),  
Elizabeth A. Early, John F. Mahan,  
Robert V. Stearns, Thomas M. Wade

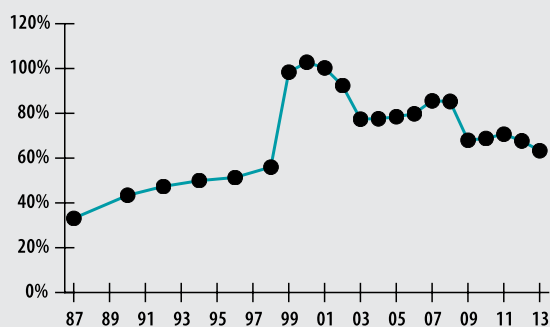
### Board Administrator

Elizabeth A. Early

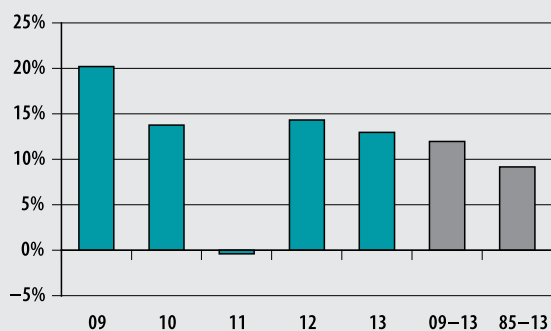
### Board Meeting

Second and Third Thursday of each month

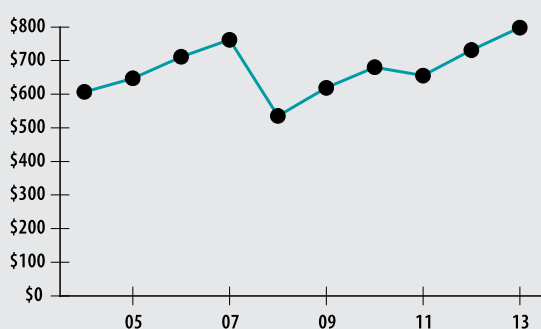
### FUNDED RATIO (1987-2013)



### INVESTMENT RETURN (2009-2013, 5 YEAR AND 29 YEAR AVERAGES)



### ASSET GROWTH (2004-2013) (MARKET VALUE IN MILLIONS)



### INVESTMENT RETURN HISTORY

**29 years 2013**  
9.18%

**28 years 2012**  
9.04%

**27 years 2011**  
8.85%

**10 years 2013**  
7.14%

**10 years 2012**  
8.27%

**10 years 2011**  
5.45%

**5 years 2013**  
11.97%

**5 years 2012**  
2.53%

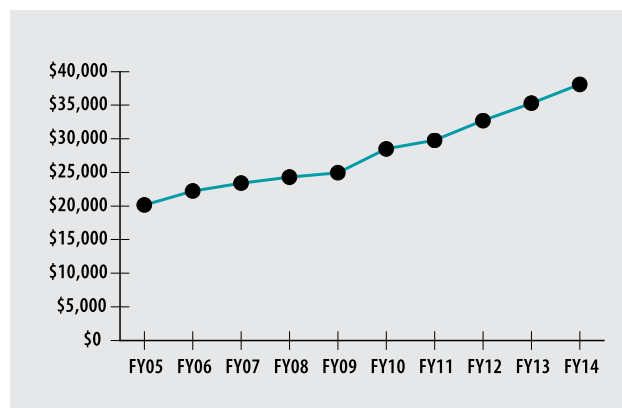
**5 years 2011**  
1.57%

## ACTUARIAL

▶ Funded Ratio	63.3%
▶ Date of Last Valuation	01/13
▶ Actuary	The Segal Company
▶ Assumed Rate of Return	7.75%
▶ Funding Schedule	4.0% Increasing Phase-in
▶ Year Fully Funded	2032
▶ Unfunded Liability	\$410.5 M
▶ Total Pension Appropriation (Fiscal 2014)	\$38.1 M

	ACTIVE	RETIRED
▶ Number of Members	3,260	2,754
▶ Total Payroll/Benefit	\$166.1 M	\$65.6 M
▶ Average Salary/Benefit	\$50,900	\$23,800
▶ Average Age	47	NA
▶ Average Service	14.0 years	NA

## 10-YEAR HISTORY OF APPROPRIATIONS (IN THOUSANDS)

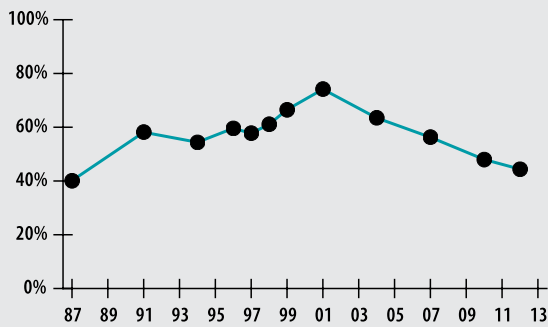


## EARNED INCOME OF DISABILITY RETIREES (2012)

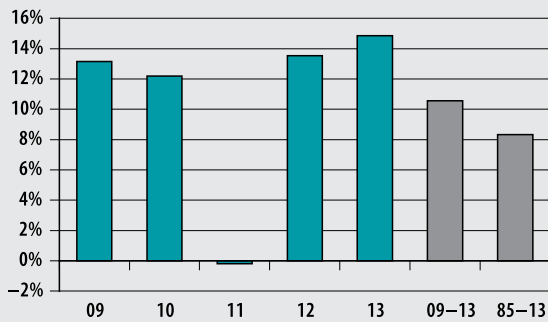
▶ Number of Disability Retirees	443
▶ Number Who Reported Earnings	81
▶ Number of Excess Earners	2
▶ Total Amount of Refund Due	\$5,507

▶ 2013 Return	12.98%
▶ 2013 Market Value	\$798.2 M
▶ 2009-2013 (Annualized)	11.97%
▶ 1985-2013 (Annualized)	9.18%

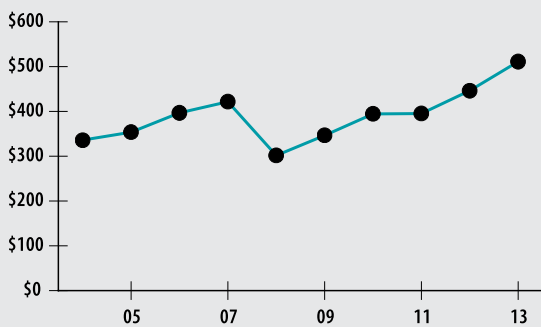
#### FUNDED RATIO (1987-2013)



#### INVESTMENT RETURN (2009-2013, 5 YEAR AND 29 YEAR AVERAGES)



#### ASSET GROWTH (2004-2013) (MARKET VALUE IN MILLIONS)



#### INVESTMENT RETURN HISTORY

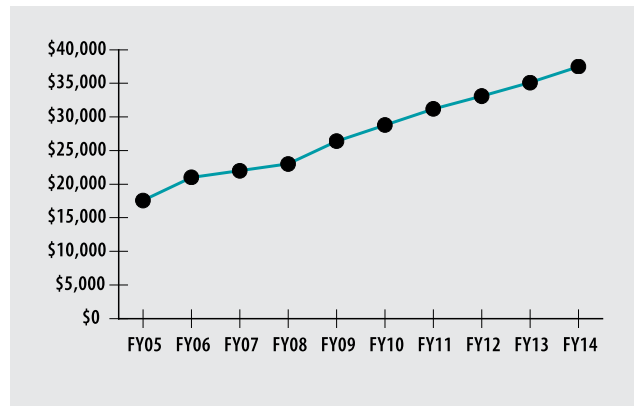
<b>29 years 2013</b> 8.33%	<b>28 years 2012</b> 8.10%	<b>27 years 2011</b> 7.91%
<b>10 years 2013</b> 5.59%	<b>10 years 2012</b> 5.73%	<b>10 years 2011</b> 3.42%
<b>5 years 2013</b> 10.57%	<b>5 years 2012</b> 1.08%	<b>5 years 2011</b> 0.21%

#### ACTUARIAL

▶ Funded Ratio	44.4%
▶ Date of Last Valuation	01/12
▶ Actuary	KMS Actuaries
▶ Assumed Rate of Return	8.00%
▶ Funding Schedule	4.0% Increasing Phase-in
▶ Year Fully Funded	2040
▶ Unfunded Liability	\$546.1 M
▶ Total Pension Appropriation (Fiscal 2014)	\$37.5 M

	ACTIVE	RETIRED
▶ Number of Members	6,377	2,975
▶ Total Payroll/Benefit	\$239.0M	\$49.4 M
▶ Average Salary/Benefit	\$37,500	\$16,600
▶ Average Age	48	73
▶ Average Service	10.4 years	NA

#### 10-YEAR HISTORY OF APPROPRIATIONS (IN THOUSANDS)



#### EARNED INCOME OF DISABILITY RETIREES (2012)

▶ Number of Disability Retirees	236
▶ Number Who Reported Earnings	71
▶ Number of Excess Earners	5
▶ Total Amount of Refund Due	\$20,621

▶ 2013 Return	14.86%
▶ 2013 Market Value	\$510.9 M
▶ 2009-2013 (Annualized)	10.57%
▶ 1985-2013 (Annualized)	8.33%

**Board Members**

Treasurer Steven Grossman (Chairperson),  
Alexander E. Aikens, III, Robert Brousseau,  
Anthony Hubbard, Theresa McGoldrick, Esq.,  
Dennis Naughton, Dana Pullman,

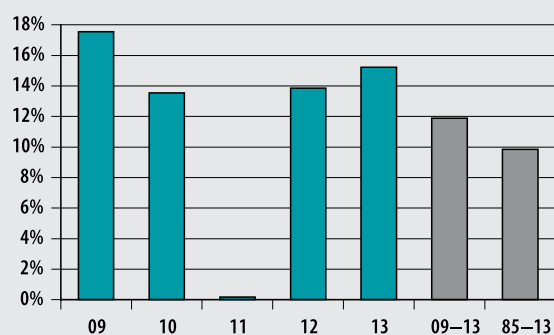
Paul Shanley, Glenn Shor

**Board Administrator**

Michael G. Trotsky, CFA

**Board Meeting**

Every other month, day and date varies

**INVESTMENT RETURN (2009-2013, 5 YEAR AND 29 YEAR AVERAGES)**

**INVESTMENT RETURN HISTORY**
**29 years 2013**

9.84%

**28 years 2012**

9.65%

**27 years 2011**

9.50%

**10 years 2013**

7.62%

**10 years 2012**

8.61%

**10 years 2011**

6.21%

**5 years 2013**

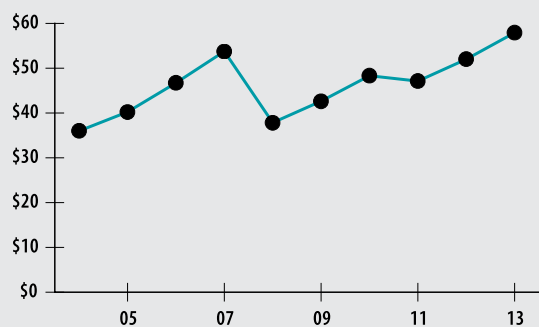
11.90%

**5 years 2012**

1.43%

**5 years 2011**

1.07%

**ASSET GROWTH (2004-2013) (MARKET VALUE IN BILLIONS)**


▶ 2013 Return	15.22%
▶ 2013 Market Value	\$57.9 B
▶ 2009-2013 (Annualized)	11.90%
▶ 1985-2013 (Annualized)	9.84%

# DISABILITY

## RETIREMENT STATISTICS

(as of 12/31/13)

PHYSICIAN CME/RTS REVIEWS  
DISABILITY NURSE CME REVIEWS  
ACCIDENTAL DEATH APPROVALS  
DISABILITY RETIREMENT APPROVALS  
DISABILITY PANEL REQUESTS

RETIREMENT BOARDS WITH 40–399 ACTIVE MEMBERS					
Adams Retirement Board	0	0	0	2	0
Amesbury Retirement Board	0	0	0	2	0
Athol Retirement Board	0	1	0	3	0
Blue Hills Regional School Retirement Board	0	0	0	0	0
Clinton Retirement Board	1	0	0	0	0
Easthampton Retirement Board	1	2	0	2	0
Fairhaven Retirement Board	1	0	0	3	0
Gardner Retirement Board	0	0	0	1	0
Gr. Lawrence Sanitary District Retirement Board	0	0	0	0	0
Greenfield Retirement Board	3	1	0	7	0
Hull Retirement Board	0	0	0	3	0
Marblehead Retirement Board	2	1	0	0	0
Mass Housing Finance Agency Retirement Board	0	0	0	0	0
Maynard Retirement Board	1	1	0	1	0
Milton Retirement Board	0	1	0	4	0
Minuteman Regional School District Ret. Board	0	0	0	1	0
Montague Retirement Board	0	0	0	1	0
Newburyport Retirement Board	1	0	0	1	0
North Adams Retirement Board	1	1	0	3	0
Northbridge Retirement Board	1	1	0	2	0
Reading Retirement Board	1	1	1	2	0
Saugus Retirement Board	2	2	0	2	0
Southbridge Retirement Board	0	1	0	2	0
Stoneham Retirement Board	1	0	0	0	0
Swampscott Retirement Board	0	1	1	3	1
Webster Retirement Board	0	0	0	1	0
Winchester Retirement Board	1	0	0	4	0
Winthrop Retirement Board	1	0	0	0	0
RETIREMENT BOARDS WITH 400–599 ACTIVE MEMBERS					
Belmont Retirement Board	1	0	0	2	0
Beverly Retirement Board	0	1	0	5	0
Concord Retirement Board	0	0	0	5	0
Danvers Retirement Board	2	4	1	4	0
Dedham Retirement Board	6	3	1	4	0
Fitchburg Retirement Board	2	1	0	2	0
Gloucester Retirement Board	1	1	1	2	0
Hingham Retirement Board	1	1	0	0	0
Leominster Retirement Board	1	1	2	1	0
Lexington Retirement Board	2	1	0	3	0

# DISABILITY

## RETIREMENT STATISTICS

(as of 12/31/13)

DISABILITY RETIREMENT APPROVALS  
ACCIDENTAL DEATH APPROVALS  
DISABILITY NURSE CME REVIEWS  
PHYSICIAN CME/RTS REVIEWS  
DISABILITY PANEL REQUESTS

Melrose Retirement Board	0	2	1	2	0
Milford Retirement Board	0	0	0	3	0
Natick Retirement Board	0	0	1	0	0
North Attleboro Retirement Board	1	2	0	3	0
Norwood Retirement Board	2	7	1	3	0
Revere Retirement Board	8	5	3	5	2
Wakefield Retirement Board	3	2	1	2	0
Watertown Retirement Board	3	2	1	1	0
West Springfield Retirement Board	0	1	0	2	0
Woburn Retirement Board	2	0	2	2	0
<b>RETIREMENT BOARDS WITH 600-899 ACTIVE MEMBERS</b>					
Andover Retirement Board	1	2	0	4	0
Arlington Retirement Board	4	6	2	6	0
Attleboro Retirement Board	5	7	0	5	0
Braintree Retirement Board	0	1	0	4	0
Chelsea Retirement Board	4	3	0	5	0
Dukes County Contributory Retirement System	2	1	0	5	0
Everett Retirement Board	2	1	0	7	0
Falmouth Retirement Board	2	2	0	6	1
Malden Retirement Board	5	3	1	9	0
Marlborough Retirement Board	5	2	1	4	0
Medford Retirement Board	3	4	1	8	0
Methuen Retirement Board	2	0	0	7	0
Needham Retirement Board	0	0	1	1	0
Northampton Retirement Board	0	0	0	8	0
Peabody Retirement Board	2	2	2	4	0
Salem Retirement Board	1	1	0	5	0
Shrewsbury Retirement Board	2	0	0	5	0
Waltham Retirement Board	6	6	0	6	0
Wellesley Retirement Board	1	1	0	7	0
Westfield Retirement Board	4	2	0	2	0
Weymouth Retirement Board	3	2	0	6	0
<b>RETIREMENT BOARDS WITH 900-2,399 ACTIVE MEMBERS</b>					
Berkshire County Retirement Board	1	3	0	6	0
Brockton Retirement Board	7	5	2	13	0
Brookline Retirement Board	8	12	1	15	0
Chicopee Retirement Board	7	7	0	11	0
Fall River Retirement Board	9	11	2	22	0
Framingham Retirement Board	5	4	1	7	1



# DISABILITY

## RETIREMENT STATISTICS

(as of 12/31/13)

DISABILITY RETIREMENT APPROVALS  
ACCIDENTAL DEATH APPROVALS  
DISABILITY NURSE CME REVIEWS  
PHYSICIAN CME/RTS REVIEWS  
DISABILITY PANEL REQUESTS

Franklin County Retirement Board	4	2	0	5	0
Haverhill Retirement Board	3	2	0	6	1
Holyoke Retirement Board	3	2	0	11	1
Lawrence Retirement Board	3	3	1	11	1
Lowell Retirement Board	11	10	1	17	1
Lynn Retirement Board	7	7	1	20	1
Mass Port Authority Retirement Board	5	5	0	4	0
Mass Water Resource Authority Retirement Board	2	1	0	6	0
New Bedford Retirement Board	18	6	2	34	2
Newton Retirement Board	0	2	1	12	0
Pittsfield Retirement Board	1	1	1	5	2
Plymouth Retirement Board	3	1	0	4	0
Quincy Retirement Board	5	4	1	6	0
Somerville Retirement Board	5	5	0	4	0
Taunton Retirement Board	2	3	0	7	0
<b>RETIREMENT BOARDS WITH 2,400-10,000 ACTIVE MEMBERS</b>					
Barnstable County Board of Retirement	34	17	1	32	0
Bristol County Board of Retirement	10	8	0	37	0
Cambridge Retirement Board	14	10	3	19	0
Essex Regional Retirement Board	7	11	0	14	0
Hampden County Regional Retirement Board	7	4	1	13	0
Hampshire County Regional Retirement Board	3	2	0	11	0
Middlesex County Retirement Board	18	14	0	44	3
Norfolk County Retirement Board	16	12	2	33	0
Plymouth County Retirement Board	15	10	1	43	1
Springfield Retirement Board	7	10	2	58	2
Worcester Regional Retirement Board	14	11	0	26	0
Worcester Retirement Board	14	8	2	30	1
<b>RETIREMENT BOARDS WITH 20,500-90,000 ACTIVE MEMBERS</b>					
Boston Retirement Board	82	85	6	122	3
State Retirement Board	168	163	7	525	19
Teachers Retirement Board	43	30	0	53	2
<b>TOTAL ALL RETIREMENT BOARDS:</b>	<b>668</b>	<b>585</b>	<b>64</b>	<b>1,501</b>	<b>45</b>

### RESTORATION TO SERVICE STATISTICS *(Provided for those boards where a disability retiree has returned to work.)*

Boston Retirement Board **1**

Fitchburg Retirement Board **1**

Pittsfield Retirement Board **1**

# INVESTMENT VENDORS

- The following is a listing of the investment managers, custodians, and consultants that serve the Massachusetts public pension systems. The listing is based on information supplied by the retirement boards.

RETIREMENT BOARD	INVESTMENT VENDORS		
<b>ADAMS</b> ► <b>Custodian:</b> State Street Bank & Trust	<ul style="list-style-type: none"> <li>American Funds</li> </ul>	<ul style="list-style-type: none"> <li>Europacific Growth Fund</li> </ul>	<ul style="list-style-type: none"> <li>Granite Investment Advisors</li> </ul>
<b>AMESBURY</b>	<ul style="list-style-type: none"> <li>PRIT</li> </ul>		
<b>ANDOVER</b>	<ul style="list-style-type: none"> <li>PRIT</li> </ul>		
<b>ARLINGTON</b> ► <b>Custodian:</b> State Street Bank & Trust	<ul style="list-style-type: none"> <li>PRIT</li> </ul>	<ul style="list-style-type: none"> <li>Wilshire Associates Inc.</li> </ul>	
<b>ATHOL</b>	<ul style="list-style-type: none"> <li>PRIT</li> </ul>		
<b>ATTLEBORO</b> ► <b>Custodian:</b> State Street Bank & Trust ► <b>Consultant:</b> Dahab Associates Inc.	<ul style="list-style-type: none"> <li>Boston Advisors, LLC</li> <li>Daruma Capital Management, LLC</li> <li>Frontier Capital Management Co., LLC</li> <li>Hancock Natural Resource Group, Inc.</li> <li>Herndon Capital Management, LLC</li> </ul>	<ul style="list-style-type: none"> <li>Invesco Core Real Estate USA, LP</li> <li>Invesco National Trust Company</li> <li>Orleans Capital Management Corp.</li> <li>PRIT</li> <li>Pyramis Global Advisors, LLC</li> </ul>	<ul style="list-style-type: none"> <li>Rhumblin Advisors</li> <li>RMK Global Timberland Group</li> <li>State Street Global Advisors</li> <li>Wells Capital Management Inc.</li> </ul>
<b>BARNSTABLE COUNTY</b>	<ul style="list-style-type: none"> <li>Intercontinental Capital Management, LLC</li> </ul>	<ul style="list-style-type: none"> <li>PRIT</li> </ul>	<ul style="list-style-type: none"> <li>UBS Realty Investors, LLC</li> </ul>
<b>BELMONT</b> ► <b>Custodian:</b> State Street Bank & Trust ► <b>Consultant:</b> New England Pension Consultants	<ul style="list-style-type: none"> <li>AEW Capital Management, LP</li> <li>Aberdeen Asset Management, Inc.</li> <li>Atlanta Capital</li> <li>Delaware Capital Management Advisers, Inc.</li> </ul>	<ul style="list-style-type: none"> <li>Harbourvest Partners, LLC</li> <li>Loomis Sayles &amp; Company</li> <li>Mondrian Investment Partners Limited</li> <li>Pacific Investment Management Company, LLC</li> </ul>	<ul style="list-style-type: none"> <li>PRIT</li> <li>Rothschild Asset Management Inc.</li> <li>Scout Capital Management, LLC</li> </ul>
<b>BERKSHIRE COUNTY</b>	<ul style="list-style-type: none"> <li>PRIT</li> </ul>		
<b>BEVERLY</b>	<ul style="list-style-type: none"> <li>PRIT</li> </ul>		
<b>BLUE HILLS REGIONAL</b>	<ul style="list-style-type: none"> <li>PRIT</li> </ul>		
<b>BOSTON (CITY)</b> ► <b>Custodian:</b> State Street Bank & Trust ► <b>Consultant:</b> New England Pension Consultants	<ul style="list-style-type: none"> <li>AEW Capital Management, LP</li> <li>Alliance Corporate Finance Group, Inc.</li> <li>Angelo, Gordon &amp; Co., LP</li> <li>Arsenal Real Estate Partners</li> <li>Ascent Venture Partners</li> <li>Audax Group</li> <li>Blue Point Capital Partners, LLC</li> <li>Boston Company Asset Management, LLC (The)</li> <li>Boston Millennia Partners</li> <li>Brookfield Asset Management Pic Us, LLC</li> <li>Columbia Asset Management</li> <li>CCMP Capital Advisors, LLC</li> <li>Centersquare Investment Management Holdings, Inc.</li> <li>Columbia Management Investment Advisors, LLC</li> <li>Commonwealth Capital Ventures</li> <li>Crescent Capital Group, LP</li> <li>D.E. Shaw Investment Management, LLC</li> <li>DRC Capital, LLP</li> <li>Dune Capital Management, LP</li> <li>Energy Spectrum Partners</li> </ul>	<ul style="list-style-type: none"> <li>Entrust Partners, LLC</li> <li>Evercore Advisors, LLC</li> <li>Fisher Investments</li> <li>Fort Hill Investment Advisors, LP</li> <li>Fountain Capital Management, LLC</li> <li>GAM USA, Inc.</li> <li>Goldentree Asset Management, LP</li> <li>Grosvenor Capital Management, LP</li> <li>Hearthstone Inc.</li> <li>Intech</li> <li>Invesco Core Real Estate USA, LP</li> <li>Ivy Asset Management Corporation</li> <li>J.F. Lehman &amp; Company, Inc.</li> <li>J.P. Morgan Investment Management, Inc.</li> <li>J.W. Childs Associates, LP</li> <li>LaSalle Investment Management, Inc.</li> <li>Lazard Asset Management, LLC</li> <li>Lexington Advisors, Inc.</li> <li>Loomis Sayles &amp; Company</li> <li>Mesirow Advanced Strategies, Inc.</li> </ul>	<ul style="list-style-type: none"> <li>Mesirow Financial Investment Management, Inc.</li> <li>Monitor Clipper Partners</li> <li>MPM Capital, LP</li> <li>New England Partners</li> <li>Oaktree Capital Management, LP</li> <li>Panagora Asset Management, Inc.</li> <li>Pearlmark Investment Advisors, LLC</li> <li>Perella Weinberg Partners Capital Management, LP</li> <li>Permal Asset Management, Inc.</li> <li>Polunin Capital Partners</li> <li>Prudential Capital Partners</li> <li>Rhumblin Advisors</li> <li>Richmond Capital Management, Inc.</li> <li>Sanderling Ventures</li> <li>SCP Private Equity Partners</li> <li>Siguler Guff Advisors, LLC</li> <li>Standard Life Investments (USA) Limited</li> <li>State Street Global Advisors</li> </ul>

RETIREMENT BOARD	INVESTMENT VENDORS		
<b>BOSTON (CITY)</b> ▶ <b>Custodian:</b> State Street Bank & Trust ▶ <b>Consultant:</b> New England Pension Consultants	<ul style="list-style-type: none"> <li>• Sterling Venture Partners, LLC</li> <li>• TA Associates Realty</li> <li>• TH Lee Putnam Ventures</li> <li>• Thomas H. Lee Partners, LP</li> <li>• Thomas Weisel Global Growth Partners, LLC</li> </ul>	<ul style="list-style-type: none"> <li>• TRECAP Partners</li> <li>• Vanguard Venture Partners, LLC</li> <li>• Vontobel Asset Management, Inc.</li> <li>• W Capital Partners</li> <li>• Wells Capital Management, Inc.</li> </ul>	<ul style="list-style-type: none"> <li>• Western Technology</li> <li>• Westfield Capital Management Company, LP</li> <li>• Westport Capital Partners, LLC</li> <li>• Z Capital Partners, LLC</li> <li>• Zevenbergen Capital Investments, LLC</li> </ul>
<b>BOSTON TEACHERS</b>	<ul style="list-style-type: none"> <li>• PRIT</li> </ul>		
<b>BRAINTREE</b> ▶ <b>Custodian:</b> State Street Bank & Trust ▶ <b>Consultant:</b> New England Pension Consultants	<ul style="list-style-type: none"> <li>• Acadian Asset Management, LLC</li> <li>• Boston Company Asset Management, LLC (The)</li> <li>• Lexington Advisors, Inc.</li> </ul>	<ul style="list-style-type: none"> <li>• Loomis Sayles &amp; Company</li> <li>• Massachusetts Financial Services Company</li> <li>• Pictet Asset Management</li> </ul>	<ul style="list-style-type: none"> <li>• PRIT</li> <li>• State Street Global Advisors</li> </ul>
<b>BRISTOL COUNTY</b> ▶ <b>Custodian:</b> State Street Bank & Trust ▶ <b>Consultant:</b> Segal Rogerscasey	<ul style="list-style-type: none"> <li>• Alliance Corporate Finance Group, Inc.</li> <li>• Arrowstreet Capital, LP</li> <li>• BlackRock Investment Management, LLC</li> <li>• Brookfield Timberlands Management, LP</li> <li>• CB Richard Ellis Group, Inc.</li> <li>• Charles River Ventures</li> <li>• Colchester Global Investors</li> <li>• Columbia Management Investment Advisers, LLC</li> <li>• Delaware Capital Management Advisers, Inc.</li> <li>• DN Partners</li> <li>• Dupont Capital Management</li> <li>• Earnest Partners, LLC</li> </ul>	<ul style="list-style-type: none"> <li>• Hancock Natural Resource Group, Inc.</li> <li>• Hunt Investment Management, LLC</li> <li>• Income Research &amp; Management</li> <li>• Intech</li> <li>• Lazard Asset Management, LLC</li> <li>• LSV Asset Management</li> <li>• Lyrical Asset Management, LP</li> <li>• Massachusetts Financial Services Company</li> <li>• Mesirow Financial Private Equity Advisers, Inc.</li> <li>• New Boston Fund, Inc.</li> <li>• Pacific Investment Management Company, LLC</li> </ul>	<ul style="list-style-type: none"> <li>• PRIT</li> <li>• RBC Global Asset Management (U.S.), Inc.</li> <li>• Rice Investment Advisory Services, Inc.</li> <li>• RREEF Management, LLC</li> <li>• SEI Investments Management Corp.</li> <li>• Senior Tour Players, LLC</li> <li>• State Street Global Advisors</li> <li>• TA Associates Realty</li> <li>• Timberland Investment Resources, LLC</li> <li>• Trust and Fiduciary Management Services, Inc.</li> <li>• WL Ross &amp; Co., LLC</li> </ul>
<b>BROCKTON</b> ▶ <b>Custodian:</b> State Street Bank & Trust ▶ <b>Consultant:</b> New England Pension Consultants	<ul style="list-style-type: none"> <li>• Acadian Asset Management, LLC</li> <li>• Arsenal Real Estate Partners</li> <li>• Ascent Venture Partners</li> <li>• Boston Capital Ventures</li> <li>• Boston Company Asset Management, LLC (The)</li> <li>• Brandywine Global Investment Management, LLC</li> <li>• Charlesbank Capital Partners, LLC</li> <li>• D.E. Shaw Investment Management, LLC</li> <li>• Delaware Capital Management Advisers, Inc.</li> <li>• Duff &amp; Phelps, LP</li> <li>• Flag Capital Management, LLC</li> </ul>	<ul style="list-style-type: none"> <li>• HealthPoint, LLC</li> <li>• ICC Capital Management, Inc.</li> <li>• Intercontinental Capital Management, LLC</li> <li>• Invesco Private Capital, Inc.</li> <li>• Landmark Partners, LLC</li> <li>• Lazard Asset Management, LLC</li> <li>• Levine Leichtman Capital Partners, Inc.</li> <li>• Loomis, Sayles &amp; Company</li> <li>• McDonnell Investment Management, LLC</li> <li>• Mesirow Financial Investment Management, Inc.</li> <li>• New Boston Fund, Inc.</li> </ul>	<ul style="list-style-type: none"> <li>• New England Capital Partners</li> <li>• Oppenheimer Alternative Investment Management</li> <li>• Pacific Investment Management Company, LLC</li> <li>• RBC Global Asset Management (U.S.), Inc.</li> <li>• SEI Investments Management Corp.</li> <li>• Siguler Guff Advisers, LLC</li> <li>• State Street Global Advisors</li> <li>• TA Associates Realty</li> <li>• Valley Forge Asset Management</li> <li>• Wellington Management Company, LLP</li> </ul>
<b>BROOKLINE</b> ▶ <b>Custodian:</b> State Street Bank & Trust ▶ <b>Consultant:</b> New England Pension Consultants	<ul style="list-style-type: none"> <li>• AEW Capital Management, LP</li> <li>• Blackrock Kelso Capital Advisors, LLC</li> <li>• BNY Mellon</li> <li>• Champlain Investment Partners, LLC</li> <li>• Driehaus Capital Management, LLC</li> <li>• Earnest Partners, LLC</li> <li>• Hancock Natural Resources Group, Inc.</li> </ul>	<ul style="list-style-type: none"> <li>• HarbourVest Partners, LLC</li> <li>• Intech</li> <li>• Invesco Private Capital, Inc.</li> <li>• Legg Mason Capital Management, LLC</li> <li>• Lexington Advisors, Inc.</li> <li>• PRIT</li> <li>• Rothschild Asset Management, Inc.</li> </ul>	<ul style="list-style-type: none"> <li>• Russell Investment Group</li> <li>• State Street Global Advisors</li> <li>• Sustainable Woodlands Partners, LLC</li> <li>• Thornburg Investment Management, Inc.</li> <li>• Wellington Management Company, LLP</li> <li>• Wentworth, Hauser, and Violich</li> </ul>

RETIREMENT BOARD	INVESTMENT VENDORS		
<b>CAMBRIDGE</b> ▶ <b>Custodian:</b> State Street Bank & Trust ▶ <b>Consultant:</b> Segal Rogerscasey	<ul style="list-style-type: none"> <li>• AEW Capital Management, LP</li> <li>• Ascent Venture Partners</li> <li>• BlackRock Investment Management, LLC</li> <li>• Brandywine Global Investment Management, LLC</li> <li>• Columbia Management Investment Advisors, LLC</li> <li>• Fred Alger Management, Inc.</li> <li>• Hamilton Lane</li> <li>• Hancock Natural Resources Group, Inc.</li> </ul>	<ul style="list-style-type: none"> <li>• Income Research &amp; Management</li> <li>• Invesco Core Real Estate USA, LP</li> <li>• Landmark Partners, LLC</li> <li>• Lazard Asset Management, LLC</li> <li>• MacKay Shields, LLC</li> <li>• MFS Institutional Advisors, Inc.</li> <li>• Penn Square Global Real Estate Group, LLC</li> <li>• PRIT</li> </ul>	<ul style="list-style-type: none"> <li>• Pyramid Global Advisors, LLC</li> <li>• RBC Global Asset Management (U.S.), Inc.</li> <li>• Rhumbline Advisers</li> <li>• Rockwood Capital, LLC</li> <li>• Standish</li> <li>• State Street Global Advisors</li> <li>• UBS Realty Advisors, LLC</li> <li>• WEDGE Capital Management, LLP</li> </ul>
<b>CHELSEA</b>	<ul style="list-style-type: none"> <li>• PRIT</li> </ul>		
<b>CHICOPEE</b> ▶ <b>Custodian:</b> SEI Investments Management Corporation	<ul style="list-style-type: none"> <li>• PRIT</li> </ul>	<ul style="list-style-type: none"> <li>• SEI Investments Management Corporation</li> </ul>	<ul style="list-style-type: none"> <li>• Stone Consulting</li> </ul>
<b>CLINTON</b> ▶ <b>Consultant:</b> Trust Advisory Group, Ltd.	<ul style="list-style-type: none"> <li>• PRIT</li> </ul>	<ul style="list-style-type: none"> <li>• State Street Global Advisors</li> </ul>	
<b>CONCORD</b> ▶ <b>Custodian:</b> Bank of America Capital Advisors, LLC	<ul style="list-style-type: none"> <li>• Columbia Management Investment Advisers, LLC</li> </ul>	<ul style="list-style-type: none"> <li>• PRIT</li> </ul>	<ul style="list-style-type: none"> <li>• Russell Investment Group</li> </ul>
<b>DANVERS</b> ▶ <b>Custodian:</b> State Street Bank & Trust ▶ <b>Consultant:</b> Graystone Consulting	<ul style="list-style-type: none"> <li>• Dalton, Greiner, Hartman, Maher &amp; Co., LLC</li> <li>• Equus Capital Partners, Ltd.</li> <li>• Fidelity Investments Money Management, Inc.</li> <li>• Gerber-Taylor Management Company</li> </ul>	<ul style="list-style-type: none"> <li>• Longfellow Investment Management Co., LLC</li> <li>• Mount Lucas Management, LP</li> <li>• NWQ Investment Management Company, LLC</li> <li>• PRIT</li> </ul>	<ul style="list-style-type: none"> <li>• RhumbLine Advisers</li> <li>• Shenkman Capital Management, Inc.</li> <li>• TA Associates Realty</li> </ul>
<b>DEDHAM</b>	<ul style="list-style-type: none"> <li>• PRIT</li> </ul>		
<b>DUKES COUNTY</b> ▶ <b>Custodian:</b> State Street Bank & Trust ▶ <b>Consultant:</b> Dahab Associates, Inc.	<ul style="list-style-type: none"> <li>• Atlanta Capital</li> <li>• Bradford &amp; Marzec, LLC</li> </ul>	<ul style="list-style-type: none"> <li>• Navellier &amp; Associates, Inc.</li> <li>• Polen Capital Management, LLC</li> </ul>	<ul style="list-style-type: none"> <li>• PRIT</li> </ul>
<b>EASTHAMPTON</b>	<ul style="list-style-type: none"> <li>• PRIT</li> </ul>		
<b>ESSEX COUNTY</b> ▶ <b>Custodian:</b> State Street Bank & Trust ▶ <b>Consultant:</b> Dahab Associates, Inc.	<ul style="list-style-type: none"> <li>• Ascent Venture Partners</li> <li>• BlackRock Investment Management, LLC</li> <li>• Boston Millennia Partners</li> <li>• Intercontinental Capital Management, LLC</li> </ul>	<ul style="list-style-type: none"> <li>• Levine Leichtman Capital Partners, Inc.</li> <li>• MassVentures</li> <li>• PRIT</li> </ul>	<ul style="list-style-type: none"> <li>• Principal Real Estate Investors, LLC</li> <li>• Sentinel Real Estate Corporation</li> <li>• TA Associates Realty</li> </ul>
<b>EVERETT</b>	<ul style="list-style-type: none"> <li>• PRIT</li> </ul>		
<b>FAIRHAVEN</b>	<ul style="list-style-type: none"> <li>• PRIT</li> </ul>		
<b>FALL RIVER</b>	<ul style="list-style-type: none"> <li>• PRIT</li> </ul>	<ul style="list-style-type: none"> <li>• SL Capital Partners, LLP</li> </ul>	
<b>FALMOUTH</b> ▶ <b>Custodian:</b> State Street Bank & Trust ▶ <b>Consultant:</b> Wainwright Investment Counsel, LLC	<ul style="list-style-type: none"> <li>• Baring Asset Management (Asia) Limited</li> <li>• Denver Investments</li> <li>• Dimensional Fund Advisors, LP</li> <li>• Duff &amp; Phelps, LP</li> <li>• Earnest Partners, LLC</li> <li>• HGK Asset Management, Inc.</li> <li>• Intercontinental Capital Management, LLC</li> </ul>	<ul style="list-style-type: none"> <li>• Invesco National Trust Company</li> <li>• Invesco Private Capital, Inc.</li> <li>• Lee Munder Capital Group, LLC</li> <li>• Lexington Advisors, Inc.</li> <li>• Mesirow Financial Private Equity Advisors, Inc.</li> <li>• Metropolitan Real Estate Equity Management, LLC</li> <li>• PRIT</li> </ul>	<ul style="list-style-type: none"> <li>• Principal Real Estate Investors, LLC</li> <li>• RhumbLine Advisers</li> <li>• SEI Investments Management Corporation</li> <li>• Seizert Capital Partners, LLC</li> <li>• Siguler Guff Advisers, LLC</li> <li>• State Street Global Advisors</li> </ul>
<b>FITCHBURG</b>	<ul style="list-style-type: none"> <li>• PRIT</li> </ul>	<ul style="list-style-type: none"> <li>• TA Associates Realty</li> </ul>	

RETIREMENT BOARD	INVESTMENT VENDORS		
<b>FRANKLIN COUNTY</b> ► <b>Custodian:</b> Comerica Bank ► <b>Consultant:</b> Dahab Associates, Inc.	<ul style="list-style-type: none"> <li>Daruma Capital Management, LLC</li> <li>Income Research &amp; Management</li> <li>O'Shaughnessy Asset Management, LLC</li> </ul>	<ul style="list-style-type: none"> <li>Polen Capital Management, LLC</li> <li>PRIT</li> </ul>	<ul style="list-style-type: none"> <li>Seizert Capital Partners, LLC</li> <li>Systematic Financial Management, LP</li> </ul>
<b>GARDNER</b>	<ul style="list-style-type: none"> <li>PRIT</li> </ul>		
<b>GLOUCESTER</b>	<ul style="list-style-type: none"> <li>PRIT</li> </ul>		
<b>GREATER LAWRENCE</b> ► <b>Custodian:</b> BNY Mellon Asset Servicing	<ul style="list-style-type: none"> <li>Seaward Management</li> </ul>		
<b>GREENFIELD</b>	<ul style="list-style-type: none"> <li>PRIT</li> </ul>		
<b>HAMPDEN COUNTY REGIONAL</b> ► <b>Consultant:</b> Segal Rogerscasey	<ul style="list-style-type: none"> <li>Credit Suisse</li> <li>Fidelity Investments Money Management, Inc.</li> </ul>	<ul style="list-style-type: none"> <li>Invesco Private Capital, Inc.</li> <li>New Boston Fund, Inc.</li> </ul>	<ul style="list-style-type: none"> <li>PRIT</li> </ul>
<b>HAMPSHIRE COUNTY</b> ► <b>Consultant:</b> New England Pension Consultants	<ul style="list-style-type: none"> <li>Ascent Venture Partners</li> <li>Babson Capital Management, LLC</li> <li>Colchester Global Investors</li> <li>Grantham, Mayo, Van Otterloo &amp; Company, Inc.</li> <li>Intercontinental Capital Management, LLC</li> <li>Lexington Advisors, Inc.</li> </ul>	<ul style="list-style-type: none"> <li>Massachusetts Financial Services Company</li> <li>Mellon Capital Management Corporation</li> <li>Pacific Investment Management Company, LLC</li> <li>Penn Capital Management Company, Inc.</li> <li>Perella Weinberg Partners Capital Management, LP</li> </ul>	<ul style="list-style-type: none"> <li>Permal Capital Management, LLC</li> <li>PRIT</li> <li>RBC Global Asset Management (U.S.) Inc.</li> <li>RhumbLine Advisors</li> <li>Shenkman Capital Management, Inc.</li> </ul>
<b>HAVERHILL</b> ► <b>Custodian:</b> State Street Bank & Trust ► <b>Consultant:</b> Wainwright Investment Counsel, LLC	<ul style="list-style-type: none"> <li>Columbia Management Investment Advisors, LLC</li> <li>Fisher Investments</li> <li>Global Forest Partners, LP</li> <li>Globespan Capital Management, Inc.</li> <li>GrandBanks Capital</li> <li>Intercontinental Capital Management, LLC</li> <li>Invesco National Trust Company</li> </ul>	<ul style="list-style-type: none"> <li>Invesco Private Capital, Inc.</li> <li>Macquarie Funds Management</li> <li>Massachusetts Financial Services Company</li> <li>Mesirow Advanced Strategies, Inc.</li> <li>Munder Capital Management</li> <li>Northwinds Marketing</li> <li>PRIT</li> </ul>	<ul style="list-style-type: none"> <li>Putnam Investment Management, LLC</li> <li>RhumbLine Advisors</li> <li>Systematic Financial Management, LP</li> <li>TerraCap Management</li> <li>TH Lee Putnam Equity Managers, LP</li> <li>Thomas H. Lee Partners, LP</li> </ul>
<b>HINGHAM</b> ► <b>Consultant:</b> Meketa Investment Group	<ul style="list-style-type: none"> <li>PRIT</li> </ul>		
<b>HOLYOKE</b> ► <b>Consultant:</b> Segal Rogerscasey	<ul style="list-style-type: none"> <li>American Realty Advisors</li> <li>Boston Company Asset Management, LLC (The)</li> <li>Brandywine Global Investment Management, LLC</li> <li>Constitution Capital Partners, LLC</li> <li>Denver Investments</li> <li>Fidelity Investments Money Management, Inc.</li> <li>Fisher Investments</li> <li>Flynn Financial Partners</li> <li>Industry Capital Advisors, LLC</li> <li>Intercontinental Capital Management, LLC</li> </ul>	<ul style="list-style-type: none"> <li>Invesco Core Real Estate USA, LP</li> <li>Invesco National Trust Company</li> <li>Lazard Asset Management, LLC</li> <li>Long Wharf Real Estate Partners, LLC</li> <li>Mesirow Financial Private Equity Advisors, Inc.</li> <li>Oberweis Asset Management, Inc.</li> <li>OFI Global Asset Management, Inc.</li> <li>PRIT</li> <li>Putnam Investment Management, LLC</li> <li>Pyramis Global Advisors, LLC</li> </ul>	<ul style="list-style-type: none"> <li>RBC Global Asset Management (U.S.) Inc.</li> <li>Ridgeworth Capital Management, Inc.</li> <li>Schroders Newfinance Capital, LLP</li> <li>SEI Investments Management Corporation</li> <li>Seizert Capital Partners, LLC</li> <li>State Street Global Advisors</li> <li>TA Associates Realty</li> <li>TerraCap Management</li> <li>Wasatch Advisors, Inc.</li> </ul>
<b>HULL</b>	<ul style="list-style-type: none"> <li>PRIT</li> </ul>		
<b>LAWRENCE</b>	<ul style="list-style-type: none"> <li>PRIT</li> </ul>		
<b>LEOMINSTER</b> ► <b>Custodian:</b> State Street Bank & Trust	<ul style="list-style-type: none"> <li>Massachusetts Financial Services Company</li> <li>PRIT</li> </ul>	<ul style="list-style-type: none"> <li>Templeton Investment Counsel</li> </ul>	<ul style="list-style-type: none"> <li>Union Labor Life Insurance Company</li> </ul>

RETIREMENT BOARD	INVESTMENT VENDORS		
<b>LEXINGTON</b> ► <b>Custodian:</b> State Street Bank & Trust ► <b>Consultant:</b> Meketa Investment Group, Inc.	<ul style="list-style-type: none"> <li>Acadian Asset Management, LLC</li> <li>Beacon Capital Partners, LLC</li> <li>Fidelity Investments Money Management, Inc.</li> <li>Fidelity Management, Inc.</li> </ul>	<ul style="list-style-type: none"> <li>Hartford Investment Management Company</li> <li>Loomis Sayles &amp; Company</li> <li>Matthews International Capital Management, LLC</li> <li>Pacific Investment Management Company, LLC</li> </ul>	<ul style="list-style-type: none"> <li>Rhumblin Advisers</li> <li>State Street Global Advisors</li> <li>Wellington Management Company, LLP</li> </ul>
<b>LOWELL</b> ► <b>Custodian:</b> State Street Bank & Trust	<ul style="list-style-type: none"> <li>Ascent Venture Partners</li> <li>Boston Millennia Partners</li> <li>Charles River Ventures</li> </ul>	<ul style="list-style-type: none"> <li>DN Partners</li> <li>Intercontinental Capital Management, LLC</li> <li>North Atlantic Capital</li> </ul>	<ul style="list-style-type: none"> <li>PRIT</li> <li>Sentinel Real Estate Corporation</li> </ul>
<b>LYNN</b>	<ul style="list-style-type: none"> <li>Ascent Venture Partners</li> <li>BlackRock Investment Management, LLC</li> <li>BlackRock Realty Advisors, Inc.</li> </ul>	<ul style="list-style-type: none"> <li>Fidelity Investments Money Management, Inc.</li> <li>Hunt Investment Management, LLC</li> </ul>	<ul style="list-style-type: none"> <li>PRIT</li> <li>State Street Global Advisors</li> </ul>
<b>MHFA</b> ► <b>Custodian:</b> State Street Bank & Trust ► <b>Consultant:</b> Meketa Investment Group, Inc.	<ul style="list-style-type: none"> <li>AEW Capital Management, LP</li> <li>Angelo, Gordon &amp; Co., LP</li> <li>Ascent Venture Partners</li> <li>Clarion Partners</li> <li>Columbia Management Investment Advisers, LLC</li> <li>Constitution Capital Partners, LLC</li> </ul>	<ul style="list-style-type: none"> <li>Dimensional Fund Advisors, LP</li> <li>Goldman Sachs Asset Management, LP</li> <li>HarbourVest Partners, LLC</li> <li>Intercontinental Capital Management, LLC</li> <li>Mackay Shields, LLC</li> </ul>	<ul style="list-style-type: none"> <li>McDonnell Investment Management, LLC</li> <li>RS Investment Management Company, LLC</li> <li>State Street Global Advisors</li> <li>Stone Harbor Investment Partners, LP</li> <li>TA Associates Realty</li> </ul>
<b>MWRA</b> ► <b>Custodian:</b> State Street Bank & Trust ► <b>Consultant:</b> New England Pension Consultants	<ul style="list-style-type: none"> <li>Ascent Venture Partners</li> <li>Boston Company Asset Management, LLC (The)</li> <li>Carey Institutional Advisors, LP</li> <li>Castile Ventures</li> <li>Cerberus Capital Management, LP</li> <li>Clearbridge Investments, LLC</li> <li>Entrust Partners, LLC</li> <li>Foundry Group, LLP</li> <li>Intech</li> <li>Intercontinental Capital Management, LLC</li> <li>Invesco National Trust Company</li> </ul>	<ul style="list-style-type: none"> <li>Invesco Private Capital, Inc.</li> <li>Landmark Partners, LLC</li> <li>Lee Munder Capital Group, LLC</li> <li>Loomis Sayles &amp; Company</li> <li>Mesirow Advanced Strategies, Inc.</li> <li>MFS Institutional Advisors, Inc.</li> <li>Pacific Investment Management Company, LLC</li> <li>Permal Asset Management, Inc.</li> <li>Pinebridge Investments, LLC</li> <li>PRIT</li> </ul>	<ul style="list-style-type: none"> <li>Rhumblin Advisers</li> <li>Robeco Institutional Asset Management U.S., Inc.</li> <li>Schroder Investment Management North America, Inc.</li> <li>Segal Company (The)</li> <li>SEI Investments Management Corporation</li> <li>TA Associates Realty</li> <li>Ticonderoga Capital</li> <li>Wellington Management Company, LLP</li> <li>WL Ross &amp; Co., LLC</li> </ul>
<b>MALDEN</b> ► <b>Custodian:</b> State Street Bank & Trust	<ul style="list-style-type: none"> <li>De Burlo Group, Inc. (The)</li> </ul>		
<b>MARBLEHEAD</b>	<ul style="list-style-type: none"> <li>PRIT</li> </ul>		
<b>MARLBOROUGH</b> ► <b>Custodian:</b> Comerica Securities ► <b>Consultant:</b> Meketa Investment Group, Inc.	<ul style="list-style-type: none"> <li>CB Richard Ellis Group, Inc.</li> <li>Boston Company Asset Management, LLC (The)</li> <li>Clarion Partners</li> <li>Fiduciary Management, Inc.</li> </ul>	<ul style="list-style-type: none"> <li>Frontier Capital Management Co., LLC</li> <li>Legg Mason Capital Management, LLC</li> <li>Neuberger Berman Management, LLC</li> <li>Penn Capital Management Company, Inc.</li> <li>Rhumblin Advisers</li> </ul>	<ul style="list-style-type: none"> <li>Segal Company (The)</li> <li>Shenkman Capital Management, Inc.</li> <li>SL Capital Partners, LLP</li> <li>State Street Global Advisors</li> </ul>
<b>MASSPORT</b> ► <b>Custodian:</b> State Street Bank & Trust ► <b>Consultant:</b> Wilshire Associates	<ul style="list-style-type: none"> <li>Aberdeen Asset Management, Inc.</li> <li>PRIT</li> </ul>	<ul style="list-style-type: none"> <li>Pzena Investment Management, LLC</li> <li>State Street Global Advisors</li> </ul>	<ul style="list-style-type: none"> <li>Templeton Investment Counsel</li> <li>Wellington Management Company, LLP</li> </ul>
<b>MAYNARD</b> ► <b>Custodian:</b> State Street Bank & Trust	<ul style="list-style-type: none"> <li>Boston Advisors, LLC</li> </ul>	<ul style="list-style-type: none"> <li>PRIT</li> </ul>	
<b>MEDFORD</b> ► <b>Custodian:</b> State Street Bank & Trust ► <b>Consultant:</b> New England Pension Consultants	<ul style="list-style-type: none"> <li>Columbia Management Investment Advisers, LLC</li> <li>Invesco National Trust Company</li> <li>Lazard Asset Management, LLC</li> <li>Loomis Sayles &amp; Company</li> </ul>	<ul style="list-style-type: none"> <li>Mellon Capital Management Corporation</li> <li>Pacific Investment Management Company, LLC</li> <li>PRIT</li> <li>Rhumblin Advisers</li> </ul>	<ul style="list-style-type: none"> <li>State Street Global Advisors</li> <li>Wellington Management Company, LLP</li> <li>Western Technology</li> </ul>

RETIREMENT BOARD	INVESTMENT VENDORS		
<b>MELROSE</b> ▶ <b>Consultant:</b> Segal Rogerscasey	<ul style="list-style-type: none"> <li>Ascent Venture Partners</li> <li>Hunt Investment Management, LLC</li> <li>Intercontinental Capital Management, LLC</li> </ul>	<ul style="list-style-type: none"> <li>Invesco Private Capital, Inc.</li> <li>PRIT</li> </ul>	<ul style="list-style-type: none"> <li>State Street Global Advisors</li> <li>TA Associates Realty</li> </ul>
<b>METHUEN</b>	<ul style="list-style-type: none"> <li>BlackRock Investment Management, LLC</li> </ul>	<ul style="list-style-type: none"> <li>PRIT</li> </ul>	<ul style="list-style-type: none"> <li>Sentinel Real Estate Corporation</li> </ul>
<b>MIDDLESEX COUNTY</b> ▶ <b>Custodian:</b> State Street Bank & Trust	<ul style="list-style-type: none"> <li>Alliance Corporate Finance Group, Inc.</li> <li>Alliance Technology Ventures</li> <li>Ascend Ventures Group, LLC</li> <li>Ascent Venture Partners</li> <li>Auda Private Equity, LLC</li> <li>Boston Millennia Partners</li> <li>Duke Street Capital</li> </ul>	<ul style="list-style-type: none"> <li>Global Forest Partners, LP</li> <li>Globespan Capital Management, Inc.</li> <li>Hunt Investment Management, LLC</li> <li>Intercontinental Capital Management, LLC</li> <li>Invesco Private Capital, Inc.</li> <li>North Atlantic Capital</li> <li>PRIT</li> </ul>	<ul style="list-style-type: none"> <li>Segal Company (The)</li> <li>State Street Global Advisors</li> <li>TA Associates Realty</li> <li>TH Lee Putnam Equity Managers, LP</li> <li>Thomas H. Lee Partners, LP</li> <li>VEF Advisors, LLC</li> </ul>
<b>MILFORD</b>	<ul style="list-style-type: none"> <li>PRIT</li> </ul>		
<b>MILTON</b>	<ul style="list-style-type: none"> <li>PRIT</li> </ul>		
<b>MINUTEMAN REGIONAL</b>	<ul style="list-style-type: none"> <li>PRIT</li> </ul>		
<b>MONTAGUE</b>	<ul style="list-style-type: none"> <li>PRIT</li> </ul>		
<b>NATICK</b> ▶ <b>Custodian:</b> State Street Bank & Trust ▶ <b>Consultant:</b> Fiduciary Investment Advisors, LLC	<ul style="list-style-type: none"> <li>Intercontinental Capital Management, LLC</li> <li>PRIT</li> </ul>	<ul style="list-style-type: none"> <li>SEI Investments Management Corporation</li> <li>Sentinel Real Estate Corporation</li> </ul>	<ul style="list-style-type: none"> <li>SL Capital Partners, LLP</li> </ul>
<b>NEEDHAM</b>	<ul style="list-style-type: none"> <li>PRIT</li> </ul>		
<b>NEW BEDFORD</b> ▶ <b>Custodian:</b> State Street Bank & Trust ▶ <b>Consultant:</b> Segal Rogerscasey	<ul style="list-style-type: none"> <li>Aberdeen Asset Management, Inc.</li> <li>Acadian Asset Management, LLC</li> <li>Blackrock Realty Advisors, Inc.</li> <li>Boston Company Asset Management, LLC (The)</li> <li>Hunt Investment Management, LLC</li> </ul>	<ul style="list-style-type: none"> <li>Invesco Private Capital, Inc.</li> <li>Loomis Sayles &amp; Company</li> <li>Mesirow Financial Equity Advisors, Inc.</li> <li>Pacific Investment Management Company, LLC</li> <li>SEI Investments Management Corporation</li> </ul>	<ul style="list-style-type: none"> <li>TA Associates Realty</li> <li>UBS Realty Investors, LLC</li> <li>Wellington Management Company, LLP</li> <li>Westfield Capital Management Company, LP</li> <li>Wilton Asset Management, LLC</li> </ul>
<b>NEWBURYPORT</b>	<ul style="list-style-type: none"> <li>PRIT</li> </ul>		
<b>NEWTON</b>	<ul style="list-style-type: none"> <li>Fidelity Investments Money Management, Inc.</li> </ul>	<ul style="list-style-type: none"> <li>PRIT</li> </ul>	<ul style="list-style-type: none"> <li>Segal Company (The)</li> </ul>

RETIREMENT BOARD	INVESTMENT VENDORS		
<b>NORFOLK COUNTY</b> ► <b>Custodian:</b> State Street Bank & Trust ► <b>Consultant:</b> Wainwright Investment Counsel, LLP	<ul style="list-style-type: none"> <li>• AGF Investments America</li> <li>• Allianz Global Investors Fund Management, LLC</li> <li>• ArcLight Capital Partners, LLC</li> <li>• Ascend Ventures Group, LLC</li> <li>• Boston Company Asset Management, LLC (The)</li> <li>• Boston Millennia Partners</li> <li>• Centersquare Investment Management Holdings, Inc.</li> <li>• CHL Medical Partners</li> <li>• Clarion Partners</li> <li>• Collier Investment Management, Ltd.</li> <li>• Constitution Capital Partners, LLC</li> <li>• Copper Rock Capital Partners, LLC</li> <li>• Corsair Capital LLC</li> <li>• D.E. Shaw Investment Management, LLC</li> <li>• Denver Investments</li> <li>• DSF Group</li> <li>• Fisher Investments</li> <li>• Flag Capital Management, LLC</li> </ul>	<ul style="list-style-type: none"> <li>• Gamco Asset Management, Inc.</li> <li>• Gerding Edlen Investment Management, LLC</li> <li>• Globespan Capital Management, Inc.</li> <li>• Halpern, Denny &amp; Company</li> <li>• Hamilton Lane</li> <li>• Hunt Investment Management, LLC</li> <li>• Income Research &amp; Management</li> <li>• Inflection Point Ventures</li> <li>• Intercontinental Capital Management, LLC</li> <li>• JP Morgan Investment Management, Inc.</li> <li>• Kleinwort Benson Investors International, Ltd.</li> <li>• Lazard Asset Management, LLC</li> <li>• Levine Leichtman Capital Partners, Inc.</li> <li>• LLM Capital Partners</li> <li>• Loomis, Sayles &amp; Company</li> <li>• Mesirow Advanced Strategies, Inc.</li> <li>• Mesirow Financial Alternative Investments, LLC</li> <li>• MFS International Advisors, Inc.</li> </ul>	<ul style="list-style-type: none"> <li>• Monitor Venture Management</li> <li>• Munder Capital Management</li> <li>• Perseus, LLC</li> <li>• Preferred Investors</li> <li>• PRIT</li> <li>• PRISM Venture Partners</li> <li>• Putnam Investment Management, LLC</li> <li>• RhumbLine Advisers</li> <li>• Seizert Capital Partners, LLC</li> <li>• Sentinel Real Estate Corporation</li> <li>• Siguler Guff Advisors, LLC</li> <li>• SL Capital Partners, LLP</li> <li>• State Street Global Advisors</li> <li>• TA Associates Realty</li> <li>• TerraCap Management</li> <li>• Wellesley Advisors Corporation</li> <li>• Wells Capital Management, Inc.</li> <li>• Wilshire Associates, Inc.</li> </ul>
<b>NORTH ADAMS</b> ► <b>Custodian:</b> State Street Bank & Trust	<ul style="list-style-type: none"> <li>• De Burlo Group, Inc. (The)</li> </ul>	<ul style="list-style-type: none"> <li>• PRIT</li> </ul>	
<b>NORTH ATTLEBORO</b> ► <b>Custodian:</b> State Street Bank & Trust ► <b>Consultant:</b> Dahab Associates, Inc.	<ul style="list-style-type: none"> <li>• AmSouth Bank</li> <li>• Atlanta Capital</li> <li>• Axiom International Investors, LLC</li> <li>• Blackrock Realty Advisors, Inc.</li> </ul>	<ul style="list-style-type: none"> <li>• Brandes Investment Partners, LP</li> <li>• Intercontinental Capital Management, LLC</li> <li>• Lazard Asset Management, LLC</li> <li>• Loomis Sayles &amp; Company</li> </ul>	<ul style="list-style-type: none"> <li>• Navellier &amp; Associates, Inc.</li> <li>• RhumbLine Advisers</li> <li>• Stewart Capital Advisors, LLC</li> <li>• Vontobel Asset Management, Inc.</li> </ul>
<b>NORTHAMPTON</b> ► <b>Custodian:</b> State Street Bank & Trust	<ul style="list-style-type: none"> <li>• De Burlo Group, Inc. (The)</li> </ul>	<ul style="list-style-type: none"> <li>• PRIT</li> </ul>	
<b>NORTHBRIDGE</b>	<ul style="list-style-type: none"> <li>• PRIT</li> </ul>		
<b>NORWOOD</b> ► <b>Custodian:</b> State Street Bank & Trust ► <b>Consultant:</b> Meketa Investment Group, Inc.	<ul style="list-style-type: none"> <li>• Aberdeen Asset Management, Inc.</li> <li>• Atlanta Capital</li> <li>• Boston Company Asset Management, LLC (The)</li> <li>• Dimensional Fund Advisors, LP</li> </ul>	<ul style="list-style-type: none"> <li>• Landmark Partners, LLC</li> <li>• Oaktree Capital Management, LP</li> <li>• PRIT</li> </ul>	<ul style="list-style-type: none"> <li>• RhumbLine Advisers</li> <li>• Vontobel Asset Management, Inc.</li> <li>• Winslow Capital Management, LLC</li> </ul>
<b>PEABODY</b>	<ul style="list-style-type: none"> <li>• PRIT</li> </ul>		



## RETIREMENT BOARD

### PRIM

- **Custodian:** BNY Mellon
- **Consultants:** Callan Associates, Cliffwater LLC, Hamilton Lane, NEPC, Townsend

## INVESTMENT VENDORS

- 1818 Fund (The)
- Acadian Asset Management, LLC
- Access Capital
- Acon Investments
- Advent International
- AEW Capital Management
- AFL-CIO Housing Investment Trust
- Alchemy Partners
- Alta Communications
- American Securities Capital Partners
- Anchorage Capital, LLC
- Angelo Gordon
- APAX Partners & Co.
- Apollo Management Co.
- Arden Asset Management
- Arrowgrass G.P. Limited
- Ascend Capital, LP
- Ascent Venture Partners
- Ashmore Investment Management, Ltd.
- Asia Pacific Trust
- Austin Ventures
- Avenue Capital Group
- Baillie Gifford
- Bain Capital
- Battery Ventures
- Belmont Capital Partners
- Berkshire Partners
- Blackrock Financial Management, Inc.
- Blackstone Capital Partners
- Blackstone Group (The)
- BlueCrest Capital Limited
- Boston Ventures
- BH G.P. Limited
- Bridgepoint Capital Limited
- Brigade Capital G.P., LLC
- Campbell Group, LLC
- Candover
- Cantab Capital Partners, LP
- Canyon Johnson II
- Capital Resource Lenders
- Capula Management Limited
- Carlyle Group (The)
- Carlyle Partners
- Castille
- Catalyst Investors
- Centerbridge
- Centerbridge Special Credit Partners
- CenterSquare Investment Management
- Charlesbank Capital Partners
- Charles River Ventures
- Charterhouse Group
- Chequers
- Claren Road Capital, LLC
- Clifton Group (The)
- Code, Hennessey & Simmons
- Commonwealth Capital Ventures
- Community Capital Management
- Crescent Capital Group
- Crossroads Group (The)
- C.SFB Private Equity (DLJ Merchant Banking Partners)
- CVC Capital
- Cypress Merchant Banking Partners
- Davidson Kempner Advisors, Inc.
- Denham Capital Management
- DivcoWest
- Eaton Vance Institutional Funds
- El Dorado Ventures
- Eli Capital Management, Inc.
- Elliot Capital Advisors, LP
- Emerging Markets Management
- Equitable Capital Management Corporation
- Essex Woodlands Health Ventures
- Ethos Private Equity
- Exponent Private Equity Partners
- Fidelity Management Trust Company
- FIS Group, Inc.
- First Reserve Corporation
- Flagship Ventures
- Forest Investment Associates
- Frontier Capital Management
- Freeman Spogli Equity Partners
- GENSTAR Capital
- Gilde Buy Out Partners AG
- Glenview Capital G.P., LLC
- Gores Capital
- Grantham, Mayo, Van Otterloo & Co.
- GSO Capital Partners
- GTCR Golder Rauner
- Harbourvest Partners
- Hellman & Friedman Capital Partners
- H.I.G. Capital Partners
- Highfields Associates, LLC
- Highland Capital Partners
- Hony Capital
- Huber Capital
- Index Ventures
- Indus Partners, LLC
- ING Investment Management
- Insight Venture Partners
- Intech
- Intercontinental IV
- InterWest Partners
- Invesco Realty Advisors
- Investec Asset Management
- Jennison Associates
- Joseph Littlejohn & Levy Fund
- J.P. Morgan Investment Management
- Kelso & Company
- Kepha Partners
- Keytone Ventures
- King Street Capital Management
- Kohlberg Kravis Roberts and Co.
- KPS Capital Partners
- Landmark Equity Partners
- LaSalle Investment Management
- Loomis, Sayles & Company
- Madison Dearborn Capital Partners
- Marathon Asset Management, Ltd.
- M/C Venture Partners
- Menlo Ventures
- MFA Partners APA German European Ventures
- Mondrian Investment Partners Ltd.
- Montagu
- Montreux Equity Partners
- Nash & Sells
- Nautic Partners
- New Boston Urban Fund I
- New Enterprise Associates
- Nordic Capital
- Oaktree Capital Management
- Odyssey Investment Partners
- Olympus PartnersOnex Capital Partners
- OZ Advisors, LP
- Pacific Alternative Asset Management Co. (PAAMCO)
- Pacific Investment Management Co. (PIMCO)
- PAI Europe
- Permira Ventures
- Pershing Square G.P., LLC
- Pictet Asset Management, Inc.
- Polaris Venture Partners
- Providence Equity Partners
- Quad-C Management
- Rembrandt Venture Partners
- Riverbridge Partners
- Rock Creek Group (The)
- Russell Implementation Source
- SAIF Partners
- Samlyn Partners, LLC
- SCP Vitalife
- Shenkman Capital Management
- Sherbrooke Capital
- Sofinnova Ventures, Inc.
- SouthernSun Asset Management
- Spark Capital
- Spectrum Equity Partners
- State Street Global Advisors
- Steadfast Capital Management LP
- Stone Harbor Investment Partners LP
- Summit Creek Advisors
- Summit Ventures
- SV Life Sciences Advisors
- TA Associates/Advent
- TA Associates Realty
- Taconic Associates, LLC
- Technology Crossover Ventures
- Texas Pacific Group
- Thoma Bravo
- Thoma Cressey Partners
- Thomas H. Lee Equity Partners, LP
- Torquest Partners
- Towerbrook Capital Partners
- Trident Capital
- Trust Company of the West
- T. Rowe Price
- Union Square Ventures
- VantagePoint Partners
- Venture Capital Fund of New England (The)
- Vestar Capital Partners
- Vista Equity Partners
- Wasatch Advisors Inc.
- Wayzata Investment Partners
- Welsh, Carson, Anderson & Stowe
- Weston Presidio Capital
- WestView Capital Partners
- Whitney & Company
- William Blair Mezzanine Capital Fund, LP
- Willis Stein
- Winton Capital Management
- Xenon Private Equity, LTD
- York Capital Management

RETIREMENT BOARD		INVESTMENT VENDORS	
<b>PITTSFIELD</b> ▶ <b>Consultant:</b> Fiduciary Investment Advisors, LLC	<ul style="list-style-type: none"> <li>Hunt Investment Management, LLC</li> <li>PRIT</li> </ul>	<ul style="list-style-type: none"> <li>Sentinel Real Estate Corporation</li> <li>SL Capital Partners, LLP</li> </ul>	<ul style="list-style-type: none"> <li>State Street Global Advisors</li> </ul>
<b>PLYMOUTH</b> ▶ <b>Custodian:</b> State Street Bank & Trust ▶ <b>Consultant:</b> Fiduciary Investment Advisors, LLC	<ul style="list-style-type: none"> <li>Babson Capital Management</li> <li>Blackrock Kelso Capital Advisors, LLC</li> <li>Boston Advisors, LLC</li> <li>Boston Trust Investment Management, Inc.</li> <li>Intercontinental Capital Management, LLC</li> </ul>	<ul style="list-style-type: none"> <li>Invesco Advisors, Inc.</li> <li>Mackay Shields, LLC</li> <li>PRIT</li> <li>Robeco Institutional Asset Management U.S., Inc.</li> </ul>	<ul style="list-style-type: none"> <li>State Street Global Advisors</li> <li>Templeton Investment Counsel</li> <li>Wellington Management Company, LLP</li> <li>Westfield Capital Management Company, LP</li> </ul>
<b>PLYMOUTH COUNTY</b> ▶ <b>Custodian:</b> State Street Bank & Trust ▶ <b>Consultant:</b> Wainwright Investment Counsel, LLC	<ul style="list-style-type: none"> <li>ABS Investment Management, LLC</li> <li>Aetos Capital, LLC</li> <li>Akina Limited</li> <li>Ascend Venture Group</li> <li>Ascent Venture Partners</li> <li>Berkshire Property Advisors, LLC</li> <li>Boston Company Asset Management, LLC (The)</li> <li>Charles River Ventures</li> <li>Citigroup Alternative Investments, LLC</li> <li>Denver Investments</li> <li>DN Partners</li> <li>DSF Group</li> <li>Eaton Vance Investment Counsel</li> <li>Fisher Investments</li> <li>Franklin Templeton Investment Management</li> </ul>	<ul style="list-style-type: none"> <li>Geneva Capital Management, Ltd.</li> <li>Globespan Capital Management, Inc.</li> <li>HGK Asset Management, Inc.</li> <li>Hunt Investment Management, LLC</li> <li>Income Research &amp; Management</li> <li>Invesco National Trust Company</li> <li>J.P. Morgan Investment Management, Inc.</li> <li>Kleinwort Benson Investors International, Ltd.</li> <li>Landmark Partners, LLC</li> <li>Lee Munder Capital Group, LLC</li> <li>Leeds Equity Partners</li> <li>Levine Leichtman Capital Partners, Inc.</li> <li>Lexington Advisors, Inc.</li> <li>McDonnell Investment Management, LLC</li> <li>Mesirow Advanced Strategies, Inc.</li> </ul>	<ul style="list-style-type: none"> <li>New Boston Fund, Inc.</li> <li>Newtower Trust Company</li> <li>Prudential Real Estate Investors</li> <li>Pyramis Global Advisors, LLC</li> <li>RBC Global Asset Management (U.S.), Inc.</li> <li>RhumbLine Advisers</li> <li>RMK Timberland Group</li> <li>Rohatyn Group (The)</li> <li>SEI Investments Management Corporation</li> <li>Siguler Guff Advisers, LLC</li> <li>State Street Global Advisors</li> <li>THL Credit Advisors, LLC</li> <li>TimberVest, LLC</li> <li>Wellesley Advisors Corporation</li> <li>Wellington Management Company, LLP</li> </ul>
<b>QUINCY</b> ▶ <b>Custodian:</b> State Street Bank & Trust ▶ <b>Consultant:</b> Meketa Investment Group, Inc.	<ul style="list-style-type: none"> <li>Aberdeen Asset Management, Inc.</li> <li>Acadian Asset Management, LLC</li> <li>Adams Street Partners, LLC</li> <li>AEW Capital Management, LP</li> <li>Artio Global Management, LLC</li> <li>Beach Point Capital Management, LP</li> <li>Copper Rock Capital Partners, LLC</li> <li>Earnest Partners, LLC</li> </ul>	<ul style="list-style-type: none"> <li>Goldman Sachs Asset Management, LP</li> <li>Hancock Natural Resources Group, Inc.</li> <li>Harbor Capital Advisors, Inc.</li> <li>Invesco Private Capital</li> <li>Loomis Sayles &amp; Company</li> <li>Oppenheimer Alternative Investment Management</li> <li>PENN Capital Management Company, Inc.</li> </ul>	<ul style="list-style-type: none"> <li>PRIT</li> <li>RhumbLine Advisers</li> <li>Standard Life Investments (USA) Limited</li> <li>State Street Global Advisors</li> <li>Stone Harbor Investment Partners, LP</li> <li>TA Associates Realty</li> <li>UBS Realty Investors, LLC</li> <li>Victory Capital Management, Inc.</li> </ul>
<b>READING</b>	<ul style="list-style-type: none"> <li>PRIT</li> </ul>		
<b>REVERE</b>	<ul style="list-style-type: none"> <li>PRIT</li> </ul>		
<b>SALEM</b> ▶ <b>Custodian:</b> State Street Bank & Trust	<ul style="list-style-type: none"> <li>Ascent Venture Partners</li> </ul>	<ul style="list-style-type: none"> <li>Fidelity Investments Money Management, Inc.</li> </ul>	<ul style="list-style-type: none"> <li>PRIT</li> </ul>
<b>SAUGUS</b>	<ul style="list-style-type: none"> <li>PRIT</li> </ul>		
<b>SHREWSBURY</b> ▶ <b>Custodian:</b> State Street Bank & Trust ▶ <b>Consultant:</b> Dahab Associates, Inc.	<ul style="list-style-type: none"> <li>Atlanta Capital</li> <li>C.S. McKee, LP</li> </ul>	<ul style="list-style-type: none"> <li>Income Research &amp; Management</li> <li>Lee Munder Capital Group, LLC</li> </ul>	<ul style="list-style-type: none"> <li>PRIT</li> <li>Rice Investment Advisory Services, Inc.</li> </ul>

RETIREMENT BOARD	INVESTMENT VENDORS		
<b>SOMERVILLE</b> ► <b>Custodian:</b> State Street Bank & Trust ► <b>Custodian:</b> Comerica Securities	<ul style="list-style-type: none"> <li>• Congress Asset Management Company, LLP</li> <li>• Lazard Asset Management, LLC</li> </ul>	<ul style="list-style-type: none"> <li>• Loomis Sayles &amp; Company</li> <li>• RhumbLine Advisers</li> </ul>	<ul style="list-style-type: none"> <li>• UBS Realty Investors, LLC</li> </ul>
<b>SOUTHBRIDGE</b>	<ul style="list-style-type: none"> <li>• PRIT</li> </ul>		
<b>SPRINGFIELD</b> ► <b>Custodian:</b> PeoplesBank	<ul style="list-style-type: none"> <li>• Ascend Venture Group</li> <li>• Boston Millennia Partners</li> </ul>	<ul style="list-style-type: none"> <li>• Crescendo Ventures Management, LLC</li> <li>• DN Partners</li> </ul>	<ul style="list-style-type: none"> <li>• PRIT</li> </ul>
<b>STATE</b>	<ul style="list-style-type: none"> <li>• PRIT</li> </ul>		
<b>STATE TEACHERS</b>	<ul style="list-style-type: none"> <li>• PRIT</li> </ul>		
<b>STONEHAM</b>	<ul style="list-style-type: none"> <li>• PRIT</li> </ul>		
<b>SWAMPSCOTT</b> ► <b>Custodian:</b> State Street Bank & Trust ► <b>Consultant:</b> Fiduciary Investment Advisors, LLC	<ul style="list-style-type: none"> <li>• Fred Alger Management, Inc.</li> <li>• Intercontinental Capital Management, LLC</li> </ul>	<ul style="list-style-type: none"> <li>• North Sky Capital, LLC</li> <li>• PRIT</li> </ul>	<ul style="list-style-type: none"> <li>• Trust and Fiduciary Management Services, Inc.</li> </ul>
<b>TAUNTON</b> ► <b>Custodian:</b> State Street Bank & Trust ► <b>Consultant:</b> Dahab Associates, Inc.	<ul style="list-style-type: none"> <li>• BlackRock Investment Management, LLC</li> <li>• Boston Company Asset Management, LLC (The)</li> <li>• Boston Millennia Partners</li> <li>• Boston Trust Investment Management, Inc.</li> <li>• Brandywine Global Investment Management, LLC</li> <li>• C.S. McKee, LP</li> <li>• Daruma Capital Management, LLC</li> <li>• Denver Investments</li> </ul>	<ul style="list-style-type: none"> <li>• Earnest Partners, LLC</li> <li>• Emerald Advisers, Inc.</li> <li>• Fidelity Investments Money Management, Inc.</li> <li>• Glovista Investments, LLC</li> <li>• Herndon Capital Management, LLC</li> <li>• Intercontinental Capital Management, LLC</li> <li>• Invesco Core Real Estate USA, LP</li> <li>• Invesco National Trust Company</li> </ul>	<ul style="list-style-type: none"> <li>• Invesco Private Capital, Inc.</li> <li>• Molpus Woodlands Group, LLC</li> <li>• Munder Capital Management</li> <li>• State Street Global Advisors</li> <li>• Systematic Financial Management, LP</li> <li>• TimberVest, LLC</li> <li>• Vontobel Asset Management, Inc.</li> </ul>
<b>WAKEFIELD</b>	<ul style="list-style-type: none"> <li>• PRIT</li> </ul>		
<b>WALTHAM</b> ► <b>Custodian:</b> State Street Bank & Trust ► <b>Consultant:</b> Fiduciary Investment Advisors, LLC	<ul style="list-style-type: none"> <li>• Ascent Venture Partners</li> <li>• Hunt Investment Management, LLC</li> <li>• Intercontinental Capital Management, LLC</li> <li>• Invesco Private Capital, Inc.</li> </ul>	<ul style="list-style-type: none"> <li>• Precision Capital Advisors, LLC</li> <li>• PRIT</li> <li>• RCP Advisors, LLC</li> </ul>	<ul style="list-style-type: none"> <li>• State Street Global Advisors</li> <li>• USB Realty Investors, LLC</li> <li>• Veronis Suhler Stevenson Partners, LLC</li> </ul>
<b>WATERTOWN</b> ► <b>Custodian:</b> State Street Bank & Trust ► <b>Consultant:</b> Fiduciary Investment Advisors, LLC	<ul style="list-style-type: none"> <li>• Acadian Asset Management, LLC</li> <li>• Arsenal Real Estate Partners</li> <li>• Auda Private Equity, LLC</li> <li>• Blackrock Kelso Capital Advisors, LLC</li> <li>• Brandywine Global Investment Management, LLC</li> <li>• Earnest Partners, LLC</li> </ul>	<ul style="list-style-type: none"> <li>• Fisher Investments</li> <li>• Guggenheim Partners Investment Management, LLC</li> <li>• Income Research &amp; Management</li> <li>• Intercontinental Capital Management, LLC</li> <li>• Lee Munder Capital Group, LLC</li> </ul>	<ul style="list-style-type: none"> <li>• Massachusetts Financial Services Company</li> <li>• New Boston Fund, Inc.</li> <li>• PRIT</li> <li>• RCP Advisors, LLC</li> <li>• SEI Investments Management Corporation</li> <li>• Wellington Management Company, LLP</li> </ul>
<b>WEBSTER</b> ► <b>Custodian:</b> State Street Bank & Trust ► <b>Consultant:</b> Wainwright Investment Counsel, LLC	<ul style="list-style-type: none"> <li>• Eaton Vance Investment Counsel</li> <li>• Invesco National Trust Company</li> <li>• Lee Munder Capital Group, LLC</li> </ul>	<ul style="list-style-type: none"> <li>• Loomis Sayles &amp; Company</li> <li>• PRIT</li> <li>• RhumbLine Advisers</li> </ul>	<ul style="list-style-type: none"> <li>• Rice Investment Advisory Services, Inc.</li> <li>• SEI Investments Management Corporation</li> <li>• USB Asset Management</li> </ul>
<b>WELLESLEY</b>	<ul style="list-style-type: none"> <li>• PRIT</li> </ul>		
<b>WEST SPRINGFIELD</b> ► <b>Custodian:</b> State Street Bank & Trust	<ul style="list-style-type: none"> <li>• AmSouth Bank</li> </ul>	<ul style="list-style-type: none"> <li>• De Burlo Group, Inc. (The)</li> </ul>	<ul style="list-style-type: none"> <li>• PRIT</li> </ul>

RETIREMENT BOARD	INVESTMENT VENDORS		
<b>WESTFIELD</b>	<ul style="list-style-type: none"> <li>• Boston Company Asset Management, LLC (The)</li> <li>• Charles Schwab &amp; Co., Inc.</li> <li>• Columbia Management Investment Advisers, LLC</li> <li>• Constitution Capital Partners, LLC</li> <li>• Fisher Investments</li> <li>• Hamilton Lane</li> </ul>	<ul style="list-style-type: none"> <li>• Income Research &amp; Management</li> <li>• Intercontinental Capital Management, LLC</li> <li>• Invesco Advisers, Inc.</li> <li>• Lazard Asset Management, LLC</li> <li>• Loomis Sayles &amp; Company</li> <li>• PRIT</li> </ul>	<ul style="list-style-type: none"> <li>• RBC Global Asset Management (U.S.), Inc.</li> <li>• State Street Global Advisors</li> <li>• TerraCap Management</li> <li>• Wasatch Advisors, Inc.</li> <li>• Wells Capital Management, Inc.</li> </ul>
<b>WEYMOUTH</b> ► <b>Custodian:</b> State Street Bank & Trust ► <b>Consultant:</b> Fiduciary Investment Advisors, LLC	<ul style="list-style-type: none"> <li>• Aberdeen Asset Management, Inc.</li> <li>• Acadian Asset Management, LLC</li> <li>• Advent Capital Management, LLC</li> <li>• BlackRock Advisors, LLC</li> <li>• Boston Company Asset Management, LLC (The)</li> <li>• Bradford &amp; Marzec, LLC</li> <li>• Brandywine Global Investment Management, LLC</li> <li>• Constitution Capital Partners, LLC</li> </ul>	<ul style="list-style-type: none"> <li>• Earnest Partners, LLC</li> <li>• HarbourVest Partners, LLC</li> <li>• Intercontinental Capital Management, LLC</li> <li>• Invesco Private Capital, Inc.</li> <li>• Landmark Partners, LLC</li> <li>• Loomis Sayles &amp; Company</li> <li>• Penn Capital Management Company, Inc.</li> <li>• PRIT</li> </ul>	<ul style="list-style-type: none"> <li>• RhumbLine Advisers</li> <li>• RS Investment Management Company, LLC</li> <li>• Singular Guff Advisers, LLC</li> <li>• State Street Global Advisors</li> <li>• Templeton Investment Counsel</li> <li>• Westfield Capital Management Company, LP</li> <li>• William Blair &amp; Company, LLC</li> </ul>
<b>WINCHESTER</b> ► <b>Custodian:</b> State Street Bank & Trust	<ul style="list-style-type: none"> <li>• Guggenheim Real Estate, LLC</li> <li>• Hunt Investment Management, LLC</li> <li>• PRIT</li> </ul>	<ul style="list-style-type: none"> <li>• State Street Global Advisors</li> <li>• TA Associates Realty</li> </ul>	<ul style="list-style-type: none"> <li>• Welch &amp; Donohoe, LLP</li> <li>• Wellington Management Company, LLP</li> </ul>
<b>WINTHROP</b>	<ul style="list-style-type: none"> <li>• PRIT</li> </ul>		
<b>WOBURN</b> ► <b>Custodian:</b> State Street Bank & Trust ► <b>Consultant:</b> Wainwright Investment Counsel, LLC	<ul style="list-style-type: none"> <li>• Alliance Corporate Finance Group, Inc.</li> <li>• Charlesbank Capital Partners, LLC</li> <li>• Earnest Partners, LLC</li> <li>• Hunt Investment Management, LLC</li> <li>• Intercontinental Capital Management, LLC</li> </ul>	<ul style="list-style-type: none"> <li>• Invesco Private Capital, Inc.</li> <li>• Loomis Sayles &amp; Company</li> <li>• Macquarie Funds Management</li> <li>• PRIT</li> <li>• RhumbLine Advisers</li> </ul>	<ul style="list-style-type: none"> <li>• RS Investment Management Company, LLC</li> <li>• State Street Global Advisors</li> <li>• TA Associates Realty</li> <li>• Wilshire Associates, Inc.</li> </ul>
<b>WORCESTER</b> ► <b>Custodian:</b> State Street Bank & Trust ► <b>Consultant:</b> Meketa Investment Group, Inc.	<ul style="list-style-type: none"> <li>• Acadian Asset Management, LLC</li> <li>• Aetos Capital, LLC</li> <li>• AEW Capital Management, LP</li> <li>• American Securities, LLC</li> <li>• Ascent Venture Partners</li> <li>• Bailard</li> <li>• Benchmark Plus Management</li> <li>• Blackstone Real Estate Advisors, LP</li> <li>• Boston Millenia Partners</li> <li>• Capital International, Inc.</li> <li>• Charlesbank Capital Partners, LLC</li> <li>• Clearbridge Investments, LLC</li> <li>• Dimensional Fund Advisors, LP</li> </ul>	<ul style="list-style-type: none"> <li>• Hancock Natural Resource Group, Inc.</li> <li>• Harvest Partners, LP</li> <li>• Heitman Capital Management, LLCIncome Research &amp; Management</li> <li>• Intercontinental Capital Management, LLC</li> <li>• Invesco Core Real Estate USA, LP</li> <li>• Invesco Private Capital, Inc.</li> <li>• Lazard Asset Management, LLC</li> <li>• Lee Munder Capital Group, LLC</li> <li>• Loomis Sayles &amp; Company</li> <li>• Newstone Capital Partners, LLC</li> <li>• Northstar Company, LLC</li> </ul>	<ul style="list-style-type: none"> <li>• Opus Investment Management, Inc.</li> <li>• Pacific Investment Management Company, LLC</li> <li>• Penn Capital Management Company, Inc.</li> <li>• PRIT</li> <li>• Riverside Company (The)</li> <li>• RMK Timberland Group</li> <li>• SL Capital Partners, LLP</li> <li>• State Street Global Advisors</li> <li>• VEF Advisors, LLC</li> <li>• Vitruvian Partners, LLP</li> <li>• White Deer Energy</li> </ul>
<b>WORCESTER REGIONAL</b>	<ul style="list-style-type: none"> <li>• AEW Capital Management, LP</li> <li>• Ascent Venture Partners</li> <li>• Hunt Investment Management, LLC</li> <li>• Intercontinental Capital Management, LLC</li> </ul>	<ul style="list-style-type: none"> <li>• PRIT</li> <li>• SL Capital Partners, LLP</li> <li>• State Street Global Advisors</li> </ul>	<ul style="list-style-type: none"> <li>• TA Associates Realty</li> <li>• Ticonderoga Group</li> <li>• TRECAP Partners</li> </ul>

# PERAC DIRECTORY | UNITS AND STAFF MEMBERS

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**Jessica Kean**  
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**Anthony Tse**  
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**Irina M. Boukina**  
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**Charles Hoyt**  
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**COMMONWEALTH OF MASSACHUSETTS  
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